

THE CONTEMPORARY
SCIENCE SERIES

EVOLUTION IN ART:

AS ILLUSTRATED BY THE
LIFE-HISTORIES OF DESIGNS.

RAJA VARMA RESEARCH INSTITUTE
TRICHUR, COCHIN STATE

No. 139.

A. 16



THE CONTEMPORARY SCIENCE SERIES.

EDITED BY HAVELOCK ELLIS.

AN INTRODUCTION TO
EVOLUTION IN ART.



EVOLUTION IN ART:

AS ILLUSTRATED BY THE
LIFE-HISTORIES OF DESIGNS.

BY

ALFRED C. HADDON,

*Professor of Zoology, Royal College of Science, Dublin, Corresponding
Member of the Italian Society of Anthropology, &c.*


With 8 Plates, and 130 Figures in the Text.



LONDON:
WALTER SCOTT, LTD, PATERNOSTER SQUARE
1895.



PREFACE.



I WOULD like to take the opportunity which a Preface affords to thank those friends who have helped me in the preparation of this little book. Most of them will find their names mentioned somewhere in the text. It is also my pleasant duty to heartily acknowledge the kindness I have everywhere experienced when collecting the materials on which these studies are based. On many occasions I have entered a museum in Britain or abroad, not knowing any one on the staff. On explaining my object every facility was at once offered, cases were opened, specimens were handed to me, and various conveniences arranged; often, too, help was rendered me at the time, not only by curators and assistants, but also by museum porters and *gendarmes*. It is particularly gratifying for a stranger to be received as a colleague, and to find that museum authorities everywhere recognise that the collections put under their charge serve their end best when they are utilised by students.

A word of apology may be needed for the copious extracts which have been made from the works of

other writers. My object in this has been to show that there has been quite a considerable number of investigators who have approached the subject of decorative art from a similar point of view to that elaborated in the present essay. A quotation brings one more face to face with the author than does a mere abstract, and personally I like to feel the comradeship of similar studies. We all contribute our mites, and the only pity is we cannot all be personally known to one another.

It would afford me great pleasure if this book leads to new students entering upon this important and intensely interesting field of inquiry, and I shall always be pleased to correspond with those who are or who desire to be fellow-workers.

ALFRED C. HADDON.

CONTENTS.

	PAGE
INTRODUCTION	1
THE DECORATIVE ART OF BRITISH NEW GUINEA: AS AN EXAMPLE OF THE METHOD OF STUDY	11
I. Torres Straits and Daudai	13
II. The Fly River	26
III. The Papuan Gulf	29
IV. The Central District	43
V. The Massim District	47
VI. Relation of the Decorative Art to the Ethnology of British New Guinea	59
VII. Note on the Scroll Designs of British New Guinea	67
THE MATERIAL OF WHICH PATTERNS ARE MADE	74
1. The Decorative Transformation and Transference of Artificial Objects (Skeuomorphs)	75
1. <i>Transformation of a Solitary Object</i>	76
2. <i>Transference of Fastenings</i>	84
3. <i>Skeuomorphs of Textiles</i>	89
4. <i>Skeuomorphic Pottery</i>	97
5. <i>Stone Skeuomorphs of Wooden Buildings</i>	111
6. <i>Skeuomorphic Inappropriateness</i>	116

	PAGE
II. The Decorative Transformation of Natural Objects	118
1. <i>Physiomorphic</i>	118
2. <i>Biomorphic</i> ; A. <i>Representation of Abstract Ideas of Life</i> ; B. <i>Phyllo-morphs; The Lotus and its Wanderings</i> ; C. <i>Zoo-morphs</i> ; D. <i>Anthropomorphs</i> ; E. <i>Bio-morphic Pottery</i>	126
3. <i>Heteromorphic</i>	192
THE REASONS FOR WHICH OBJECTS ARE DECORATED	200
I. Art	200
II. Information	203
III. Wealth	212
IV. Magic and Religion	235
1. <i>Sympathetic Magic</i>	235
2. <i>Totemism</i>	240
3. <i>Religion</i>	257
4. <i>Religious Symbolism</i> ; A. <i>The Meaning and Distribution of the Fylfot</i> ; B. <i>The Psychology of Symbolism</i>	275
THE SCIENTIFIC METHOD OF STUDYING DECORATIVE ART	305
I. Application of Biological Deductions to Designs	308
II. The Geographical Distribution of Animals and of Designs	319
III. General Remarks on the Method of Study	331
INDEX	337

LIST OF ILLUSTRATIONS.

PLATE.

1. Bamboo tobacco-pipes; one-tenth natural size. Torres Straits. Drawn by the author from specimens in the British Museum.
2. Rubbing of the handle of a wooden comb; one-half natural size. Torres Straits. In the author's possession. (Original.)
3. Drawings of animals by the natives of Torres Straits; about one-quarter natural size. (Original.)
- a. Jelly-fish; b. Star-fish; c. Hammer-headed shark (*Zegmura*); d. Group of two sharks (*Carcharias*) and a turtle; e. Eagle-ray (*Atalapha*); f. Sucker-fish (*Echinops nasutus*); g. Tree-frog (*Hyla areolata*); h. Two snakes on a tobacco-pipe, between them is the hole in which the bowl is inserted; i. Crocodile (*Crocodilus porosus*), with footprints; k. Casuarina (*Casuarina*) perching at a seed, and footprints, cf. Fig. 4; l. Dolphin (*Delphinus*); m. Dugong (*Halicore australis*) spouting, and indications of waves; n. Native dog (*Canis dinga*); o. Man with a large mackerel-like fish.
- A, B, C, D, L, occur on bamboo tobacco-pipes; C, E, F, K, M, N, O, on drums; D, P, on pearl shells.
 - A, B, C, E, L, N, O, British Museum; C, K, K, Cambridge; G, Oxford; D, P, Berlin.
4. Drum from Daedai; 37½ inches long. Sketched by the author from a specimen in the Cambridge Museum. (Original.)
5. Rubbing of part of the decoration of a bamboo tobacco-pipe, probably from the mouth of the Fly River; one-third natural size, in the Liverpool Museum. In the original the lines show dark on a light ground.
6. Series of arrows from Torres Straits, collected and sketched by the author, and presented by him to the Cambridge Museum; one-third natural size. (Original.)

FIGS.

7. Snake arrow from Torres Straits (*cf.* Fig. 6). (Original.)
8. Rubbing of one side of the decoration of a drum from the Fly River, in the museum at Rome; one-fourth natural size. (Original.)
9. Rubbing of part of the carved border along a canoe from near Cape Blackwood. Taken by R. Bruce, 1894. One-sixth natural size.
- 10-19. Rubbings of carved wooden belts from the Papuan Gulf; one-fourth natural size—10, Cambridge Museum; 11, Glasgow Museum; 12, Kermans, Berlin Museum; 13, British Museum; 14, British Museum; 15, Teoripi (Author's Collection); 16, Berlin Museum; 17, Maiva, Berlin Museum; 18, Edinburgh Museum; 19, Museum of the London Missionary Society.
20. a. Drawing of Talusa, a Motu girl, by Rev. W. V. Turner, M.D. (from *Journal, Anth. Inst.*, vii., 1878, Fig. 4, p. 480). b. Back view of the same. (The hair of this girl is incorrectly drawn; it should be closely and not wavy.)
21. a. Design on a line guard from Kerepunu; b. Part of the decoration of a pipe from Milwa; c. Detail on a pipe from Kupele, in the Berlin Museum; d-e. Designs on pipes—d, from Kupele (Berlin); e, f. from Kolari (Berlin). All the Figs. are to different scales. (Original.)
22. Part of the decoration of a pipe in the Cambridge Museum; one-sixth natural size. (Original.)
23. Clay pot, with an incised pattern from Wari (Tonga Island), after a sketch by Dr. H. O. Forbes.
24. Rubbing of the half of one side of the handle of a spatula in the author's collection; one-third natural size.
25. Rubbings of both sides of a float for a fishing-net; one-half natural size.
26. Rubbing of upper two-thirds of the decoration of a club in the Glasgow Museum; one-third natural size.
- 27-30. Rubbings of part of the decoration of clubs; one-third natural size. 27, 28, D'Entrecasteaux, Edinburgh Museum; 29, 30, Cambridge Museum.
31. Rubbing of the pattern round the upper margin of a betel-peela in the Cambridge Museum; one-third natural size.
32. Rubbing of part of the carved rim of a wooden bowl from the D'Entrecasteaux Islands; one-third natural size.
33. Rubbing of the handle of a turtle-shell spatula from the Loniades, in the British Museum; one-half natural size.

FIGS.

34. Rubbing of the decoration of one side of a club; one-third natural size. The block is turned round to show the pattern more clearly, the zigzag bands in reality run across the club.
35. Rubbing of the handle of a spatula in the British Museum; one-third natural size.
36. Rubbings of the three sides of the handle of a spatula from the d'Entrecasteaux, in the Dublin Museum; one-half natural size.
37. A, B. Sketches of two stages of the "bird bracket" of two spatulas, probably from the Woodlarks, in the author's collection; C, D, analogous details from canoe carvings—C, from a photograph; D, from a specimen in the Edinburgh Museum. (Original.)
38. Rubbing of the decoration of a club in the Dublin Museum; one-third natural size.
39. Rubbing of the decoration of a club in the Dublin Museum; one-third natural size.
40. Rubbing of the central longitudinal band of a club from the d'Entrecasteaux in the Edinburgh Museum; one-third natural size.
41. Rubbing of part of the decoration of a club from the d'Entrecasteaux in the Edinburgh Museum; one-third natural size.
42. Bird and crocodile designs, Massim Archipelago. A. Canoe carving from Warl (Taste Island), about two-ninths natural size; B. Handle of a paddle in the Cambridge Museum, one-half natural size; C. Handle of a spatula in the Leiden Museum, three-sevenths natural size; D. Handle of a spatula from Tubouba (Engineer Group) in the Cambridge Museum, three-sevenths natural size; E. Handle of a paddle in the Cambridge Museum, three-sevenths natural size. (Original.)
43. Rubbing of the decoration of a Mazzi fluke in the Natural History Museum, Belfast; one-half natural size. (Original.)
44. Turtle-shell ornaments worn in Torres Straits. The ratio of size of the illustrations to the originals is as 4 : 15; A. Ordinary fish-hook, made of turtle-shell; B-C. Series of ornaments, probably derived from fish-hooks, made of turtle-shell. All in the British Museum, from a photograph by Mr. H. Oldland, of the British Museum.
45. Sketches of two axes from the South-east Peninsula of New Guinea, in the possession of the author; about one-tenth natural size. (Original.)

FIGS.

46. Mangian symbolic adze in the Copenhagen Museum; from Dr. C. March.
47. An erect *Arum*, *Kaava*, surmounted by the head of a god from Java, in the Copenhagen Museum; from Dr. C. March.
48. Rubbing of part of the decoration of a Tongan club in the Norwich Museum; one-third natural size. (Original.)
49. Rubbing of part of the decoration of a Tongan club in the Norwich Museum; one-half natural size. (Original.)
50. Rubbing of part of the decoration of a Tongan club in the Norwich Museum; one-half natural size. (Original.)
51. Sketches of tapa belts from Kerupuru, British New Guinea; about three-quarters natural size. (Original.)
52. Designs derived from *nduri* (women's covering); A, B, C, Bakairi tribe, Central Brazil; D, Asele tribe, Central Brazil. After Van den Stijnen; greatly reduced.
53. Iroquois bark vessel; after Cushing.
54. Rectangular or Iroquois type of earthen vessel; after Cushing.
55. Clay nucleus in base mould, with beginning of spiral building; a stage in the formation of a Zuli vessel; after Cushing.
- 56, 57. Variations in a motive through the influence of form. Pueblo pottery; after Holmes.
58. A. Freehand form; B. Form imposed by fabric. Forms of the same motive expressed in different arts; after Holmes.
59. Design of Fig. 60; after Holmes, from Mason.
60. Ancient Pueblo vase, Province of Tusayan. The height and width of the vase are fourteen inches; after Holmes, from Mason.
61. "Unit of the Design" of Fig. 60; after Holmes, from Mason.
62. Modern Moki rain symbol; after Holmes.
63. Decorative detail from an ancient Pueblo medicine-jar; after Holmes.
64. Rain-cloud tile of the South House in a Tusayan ceremony; after Fawkes.
65. Zuli prayer-meat-lowl; after Cushing.
66. Tracing of a landscape etched on a bamboo tobacco-pipe in Berlin; three eighths natural size. (Original.)
67. Sketch of Moe (Murray Island) by the author, from the south-west-by-west, showing the bill Gelam.
68. Pueblo water-jar; after Cushing.

FIGS.

69. Design based on a palm-leaf, Bakairi tribe, Central Brazil; after Von den Steinen.
70. Rough sketch of the Egyptian lotus (*Nymphaea lotus*); after original drawings by Professor Goodyear.
71. Sketch of the Indian lotus (*Nelumbium speciosum*); after *Description de l'Egypte: Histoire Naturelle*, from Goodyear.
72. Lotus flowers and bud painted on the coffin of a mummy from the Necropolis of Thebes, Twentieth Dynasty; after Prisse d'Avennes.
73. Lotus flower with two leaves, on a vase, from the Necropolis of Memphis, Fourth to Fifth Dynasties; after Prisse d'Avennes.
74. Lotus border; from Goodyear, after Prisse d'Avennes.
75. Lotus scroll detail on a Median vase; from Goodyear, after Courte.
76. Pattern from the ceiling of a tomb, Necropolis of Thebes, Eighteenth Dynasty; from Coffey, after Prisse d'Avennes.
77. Pattern from the ceiling of a tomb, Necropolis of Thebes, Eighteenth to Nineteenth Dynasties; from Coffey, after Prisse d'Avennes.
78. Pattern from the ceiling of tomb No. 33, Abd-el-Kourneh, Thebes; Seventeenth to Twentieth Dynasties; from Coffey, after Prisse d'Avennes and Goodyear.
79. Pattern from the ceiling of a tomb from Thebes, Seventeenth to Twentieth Dynasties; from Coffey, after Prisse d'Avennes.
80. Anthemion and astragal moulding from the Lâz at Allahabad; from Birdwood, after Ferguson.
81. Saracenic Algerian detail; from Goodyear, after Ravaisé.
82. Ionic capital of the eastern portico of the Erechtheion.
83. Early form of Ionic capital from Neandria; after Clarke.
84. Lotus design from a "geometrie" vase from Cyprus; after Goodyear.
85. Lotus derivative on a vase of the seventh century B.C., from Melos; from Goodyear, after Courte.
86. Compound flower based on the lotus, Thebes, Eighteenth to Twentieth Dynasties; from Goodyear, after Prisse d'Avennes.
87. Lotus pendant from an Egyptian necklace of the Nineteenth Dynasty; from Goodyear.
88. Anthemion from the Parthenon.
89. Hypothetical derivation of the "egg-and-dart" moulding, from a lotus pattern according to Goodyear: A. Lotus anthemion on a vessel from Rhodes, after Salomani; B, C. Lotus anthemion on

- pottery from Naukrasi, after Flinders Petrie; n. Egg-and-dart moulding from the Erechtheion; z. Degraded egg-and-dart pattern painted on a Grecian vase.
90. Horses etched on an antler from La Madeleine; from Taylor.
91. Conventional alligator from the "lost colour" ware of Chiriqui; after Holmes.
92. Simplified figure of an alligator from the "alligator" ware of Chiriqui; after Holmes.
93. Alligator design, Chiriqui; after Holmes.
94. Alligator delineation, greatly modified, Chiriqui; after Holmes.
95. Highly conventionalised alligator derivative, Chiriqui; after Holmes.
96. Series of derivatives of the alligator, showing stages of simplification, Chiriqui; after Holmes.
97. Series of alligator derivatives showing modification through use in narrow zones, Chiriqui; after Holmes.
98. Scroll derived from the body-line of the alligator, Chiriqui; after Holmes.
99. Petal derived from the body-line of the alligator, Chiriqui; after Holmes.
100. Series of alligator derivatives showing modification through use within a circular area, Chiriqui; after Holmes.
101. Pattern composed of alligator derivatives from a clay drum painted in the style of the "lost colour group," Chiriqui; after Holmes.
102. Patterns of the Karaya, Central Brazil; after Ehrenreich. A. Lizards; B. Flying lizards; C. A rattlesnake; D. A snake. A. Incised on a grave-post; B, C, D. Plaited on the handles of combs.
103. Patterns from Central Brazil; after Von den Steinen. A. Bakairi paddle; B-D. *Muraena* (fish) patterns of the Aueté; E. Luvet design, Bakairi; G. Fish-shaped bull-roarer, Nahuatá; H. *Surubi* (snake) and ray patterns; I. *Joleya* (snake); K-L. Bakairi tribe.
104. Patterns derived from bats; after Von den Steinen. A. Bakairi; B, C. Aueté.
105. Bird design, Bakairi, Central Brazil; after Von den Steinen.
106. Rubbing of part of the carved rim of a wooden bowl in the author's collection. Probably from the Woodlarks or Trobriands, British New Guinea. One-third natural size.
107. Gourd; after Holmes.

9108.

108. Clay vessel made in imitation of a gourd, from a mound in South-eastern Missouri; after Holmes.

109. Clay vessels imitated from shells, from the mounds and graves of the Mississippi Valley; after Holmes.

110, 111. Modified human figures on the shaft of a cross at Ilam, near Ashbourne; after Browne.

112. Photograph of a house, Dakota Winter Count, 1812-13; after Mallery.

113. Alaskan notice of a hunt; from Mallery, after Hoffman.

114. Pictograph of starving hunters, Alaska; after Mallery.

115. Leam-Wolf's Map, Hidatsa; after Mallery.

116. Ivory carving with records, Alaska; after Mallery.

117. Blossoms of an Iroquo; from Stevens.

118, 119. Magic combs of the Orang Sessang; from Stevens.

120. Diagram of the uppermost pattern of Fig. 119, with rectification of that pattern; from Stevens.

121. Magical photograph of the Orang-butan against the stings of scorpions and centipedes; size of original, 9½ inches; from Stevens.

122. Magical device of the Orang Belendas against a skin disease; size of original, 19 inches; from Stevens.

123. Rain-charm of the Orang Belendas; size of the original, 10½ inches; from Stevens.

124. Stretching-cleat of a drum from Mangnia, in the Berlin Museum; from March, after Stolpe; two-thirds natural size.

125. Rubbings from the handles of symbolic adzes from the Hervey Islands. A. Free Library Museum, Belfast; n. c. Belfast Natural History Museum; one-third natural size. (Original.)

126. Rubbing of part of the decoration of a Mangsian symbolic paddle, Norwich Museum; natural size. (Original.)

127. Rubbing of part of the carving of the handle of a symbolic paddle from the Hervey Islands in the Natural History Museum, Belfast; one-half natural size. (Original.)

128. Rubbing of "part of the terminal of a paddle-shaped implement in the Vienna Museum"; from March, after Stolpe; two-thirds natural size.

129. Hut-shaped ossuary; from I. Taylor, *Origin of the Aryans*.

130. Various forms of Fylfot or Swastika. A. Wheel from Hissarlik (1987), 7 m., third city, The Burnt City or Hissar; B. Do. (1881), 3½ m., fifth city; C. Do. (1990), 4 m., fifth city; D. Do. (1873); E. Detail from wheel (1993), 5 m., fourth city; F. Lotus derivative on a large amphora, with "geometric" decoration, Cyprus; G. Solar goose and lotus design on a Rhodian vase, from Salzmann, *Nicropolis de Candore*; H. Coin from Selge, Pamphylia; I. Symbols on Lydian coins; K. Triskelion on a Celtic coin; L. On a silver bowl, Etruria; also on Chinese ware; M. Coin from Cnossus, Crete; N. Ancient Indian coin; O. On coin from Ujjain, Central India; P. Foot-print of Baddhi (so-called), Amaravati Top, India; Q. Thibetian symbol; R. Roman altar at High Rochester, dedicated to Minerva, by Lucius Cassilius Optatus; S. Roman altar at High Rochester, dedicated to the standards of the faithful of the Verdun by Titus Licinius Valerianus; T. Celto-Roman altar at Birdswald, dedicated to Jupiter Optimus Maximus (JOM), apparently by Lucius garrisoned in Amblogenna; the four-rayed wheels were solar symbols among the Gauls; U. Ogham stone, Aglish, County Kerry; V. Ancient Scandinavian symbols; W. Legend on church bell, Hathersage, Derbyshire, 1617. A-M, P. H. Schliemann, *Hissar*; P, Q. Gooden, *Grammar of the Latin*; R, L, O, S. R. P. Gregg, *Archæologia*, xlviii., 1885; T, R, M, N, S. Count Goblet d'Alviella, *The Migrations and Symbols*; S, T, U, W, V. H. Colley March, *Trans. Lanc. and Cheshire Ant. Soc.*, 1886. For further details the reader is referred to these authors.

SOURCES OF THE ILLUSTRATIONS

- FIGS. 9-19, 24-30, 33-36, 38-41, 67 were generously placed at my disposal by the Council of the Royal Irish Academy.
- All the Figures from 1 to 41 (except Figs. 3, 21, 37), and Figs. 42, 43, 51, 66, 67, 106, are either the originals or copies of illustrations which have appeared in the author's "The Descriptive Art of British New Guinea," *Cunningham Memoir*, 2., *Royal Irish Academy*, 1894.
- 20, 46, 47, 124, 128 were kindly lent by the Council of the Anthropological Institute. (Fig. 20 is from the *Journ. Anth. Inst.*, vii., 1878, p. 480, and the others from *loc. cit.* vii., 1893, Plate XXIII.)
- 52, 69, 103-105 are copied by the kind permission of the author and publisher from *Unter den Naturvölkern Zentral-Brasiliens*, by Professor Dr. Karl von den Steinen. Berlin, 1894, Dietrich Reimer.
- 51-63, 65, 68, 107-109, 112-116 are copied by permission from the *Fourth Annual Report of the Bureau of Ethnology*, 1882-83, Washington, 1886, and Figs. 91-101 from the *Sixth Annual Report*, 1884-85 (1888).
- 59-61 are from Olin T. Mason, *The Origins of Inventions*, 1895; after Holmes.
- 64 is from the *Journal of American Ethnol. and Arch.*, ii., 1892, p. 112.
- 70, 71, 74, 75, 81, 85-87 are copied from Professor Gaidyev's *The Grammar of the Lotus*. Special permission was kindly granted by Messrs. Gilbert and Rivington to copy Figs. 87, 130-1, which are original illustrations in the *Grammar*.
- 72, 73 are traced from *Trésor d'Armes, Histoire de l'Art Égyptien d'après les Monuments*, Paris, 1878.

xviii SOURCES OF THE ILLUSTRATIONS.

FIGS.

- 76-79 are from tracings kindly lent by Mr. G. Colley (*Journ. Roy. Soc. Ant., Ireland*, Dec. 1894; after Prisse d'Avennes).
- 80 is from Sir G. Birdwood's *Industrial Arts of India*, iii., Fig. 20, p. 107.
- 81 is from Key's *Antiquities of Athens*, 1837; after Stuart.
- 84 is from *The Architectural Record*, iii., 1894. "The Lusitan Origin of the Greek Anthemion," p. 274.
- 98, 129 are from Canon Isaac Taylor's *Origin of the Alphabet*.
- 102 is copied by permission from Dr. P. Ehrenreich.
- 110, 111 are from some plates specially prepared to illustrate the Disney Lectures of Professor C. H. Brown, Long Term, Cambridge, 1889.
- 117, 120-123 are from the original drawings which illustrated Professor Grünwedel's account of H. Vaughan Steyer's investigations. *Zeitschr. für Ethnol.*, xxv., 1893, xxvi., 1894. These were courteously lent to me by Professor Grünwedel and the Redaktions-Commissio. Figs. 118, 119 are from Plate II., vol. xxv.
- Count Goblet d'Alviella was good enough to permit me to copy the table on p. 299, from the English edition of *The Allegation of Symbols*, 1894, A. Constable & Co., Westminster.
- All the figures not mentioned above are original.
- Plates I.-VIII. were very generously placed at my service by my friend Dr. H. Colley March; they previously illustrated "The Meaning of Ornament, or its Archaeology and its Psychology," *Trans. Lancashire and Cheshire Ant. Soc.*, 1885.

EVOLUTION IN ART.

No. 139.

EVOLUTION IN ART.

INTRODUCTION.

NOTWITHSTANDING the immense number of books, dissertations, and papers which have been written on pictorial and decorative art, I venture to add one more to their number. I profess to be neither an artist nor an art critic, but simply a biologist who has had his attention turned to the subject of decorative art. One of my objects is to show that delineations have an individuality and a life-history which can be studied quite irrespective of their artistic merit.

We are not now concerned with the æsthetic aspect of the arts of design, nor with those theories of art which artists and art critics like to discuss, and concerning which John Collier, in his masterly little *Primer of Art*, has expressed himself in no uncertain terms. According to this author, art may, speaking broadly, be defined as "a creative operation of the intelligence, the making of something either with a view to utility or pleasure." As a matter of fact the term "art" now has a tendency to be confined to designate the Fine Arts as opposed to the Useful Arts; not only so, but instead of including personal decoration, ornamentation, painting, sculpture, dancing, poetry, music, and the drama, the term is very often limited to ornamentation, painting, and sculpture. It is with these three that we are now more immediately concerned, and

more particularly with the first of them, or decorative art. "In this narrower sense art may be defined as the making of something to please the eye, . . . As to what is pleasing, that each person must decide for himself."

Art has also a physical and a physiological aspect, such as "the questions of harmony of line and colour, which lie at the root of all art." With Dr. Collier, we may leave these "untouched, not because they are unimportant, but because not enough is known about them to make their discussion in the least profitable."

The scope, then, of the following pages is to deal with the arts of design from a biological or natural history point of view.

When difficult problems have to be investigated the most satisfactory method of procedure is to reduce them to their simplest elements, and to deal with the latter before studying their more complex aspects. The physiology of the highest animals is being elucidated largely by investigations upon the physiology of lower forms, and that of the latter in their turn by a knowledge of the activities of the lowest organisms. It is among these that the phenomena of life are displayed in their least complex manifestations; and they, so to speak, give the key to a right apprehension of the others.

So, too, in studying the arts of design. The artistic expression of a highly civilised community is a very complex matter, and its complete unravelment would be an exceedingly difficult and perhaps impossible task. In order to gain some insight into the principles which underlie the evolution of decorative art, it is necessary to confine one's attention to less specialised conditions; the less the complication, the greater the facility for a comprehensive survey. In order, therefore, to understand civilised art we must study barbaric art, and to elucidate this savage art must be investigated. Of course it must be understood that no hard and fast line can be drawn between any two of these stages

of culture; I employ them merely as convenient general terms. These are the reasons why I shall confine myself very largely to the decorative art of savage peoples.

There are two methods of studying the art of savages; the one is to take a comparative view of the art of diverse backward peoples; the other is to limit the attention to a particular district or people. The former is extremely suggestive; but one is very liable at times to be led astray by resemblances, as I shall have frequent occasion to point out in the following pages. The latter is in some respects much more certain in its conclusions, and is the only way by which certain problems can be solved. In the first part of this book I shall adopt the latter plan in order to indicate its particular value, and to afford data for subsequent discussion. In the remaining parts of the book I shall draw my illustrations from the most convenient sources, irrespective of race or locality.

In my first section the decorative art of a particular region has been studied much in the same way as a zoologist would study a group of its fauna, say the birds or butterflies. Naturally, the methods of the purely systematic zoologist neither can nor should be entirely followed, for the aim in life of the analytical zoologist is to record the fauna of a district and to classify the specimens in an orderly manner. To the more synthetically-minded zoologist the problems of the geographical distribution of animals have a peculiar fascination, and he takes pleasure in mapping out the geographical variations of a particular species and in endeavouring to account for the diversity of form and colour which obtains, as well as to ascertain the place of its evolution and the migrations which have subsequently taken place. The philosophical student also studies the development of animals and so learns something of the way in which they have come to be what they are, and at the same time light is shed upon genealogies and relationships.

The beautifying of any object is due to impulses which

are common to all men, and have existed as far back as the period when men inhabited caves and hunted the reindeer and mammoth in Western Europe. The craving for decorative art having been common to mankind for many thousand years, it would be a very difficult task to determine its actual origin. All we can do is to study the art of the most backward peoples, in the hope of gaining sufficient light to cast a glimmer down the gloomy perspective of the past.

There are certain needs of man which appear to have constrained him to artistic effort; these may be conveniently grouped under the four terms of Art, Information, Wealth, and Religion.

Art.—Aesthetics is the study or practice of art for art's sake, for the sensuous pleasure of form, line, and colour.

Information.—It is not easy to find a term which will express all that should be dealt with in this section. In order to convey information from one man to another, when oral or gesture language is impossible, recourse must be had to pictorial signs of one form or another. It is the history of some of these that will be dealt with under this term.

Wealth.—It is difficult to distinguish among savages between the love of wealth or power. In more organised societies, power, irrespective of wealth, may dominate men's minds; and it is probable that, whereas money is at first sought after in order to feel the power which wealth can command, later it often degenerates into the miser's greed for gain.

The desire for personal property, and later for enhancing its value, has led to the production of personal ornaments apart from the purely æsthetic tendency in the same direction. There are also emblems of wealth, and besides these, others of power or authority. The practice of barter has led to the fixation of a unit of value, and this in time became represented by symbols—*i.e.*, money.

Religion.—The need of man to put himself into sympathetic relation with unseen powers has always expressed itself in visual form, and it has gathered unto it the foregoing secular triad.

Representation and symbolism convey information or suggest ideas.

Æsthetics brings her trained eye and skilled hand.

Fear, custom, or devotion have caused individual or secular wealth to be directed into other channels, and have thereby entirely altered its character. The spiritual and temporal power and authority of religion has also had immense and direct influence on art.

In a very large number of cases what I have termed the four needs of man act and react upon one another, so that it is often difficult or impossible to distinguish between them, nor do I profess to do so in every case. It is sufficient for our present purpose to acknowledge their existence and to see how they may affect the form, decoration, or representation of objects.

Having stated the objects for which these representations are made, we must pass to a few other general considerations.

It is probable that *suggestion* in some cases first turned the human mind towards representation. A chance form or contour suggested a resemblance to something else. From what we know of the working of the mind of savages, a mere resemblance is sufficient to indicate an actual affinity. These chance resemblances have occupied a very important place in what has been termed sympathetic magic, and natural objects which suggest other objects are frequently slightly carved, engraved, or painted in order to increase the fancied resemblance. A large number of examples of this can be culled from the writings of missionaries and others, or seen in large ethnographical collections. Mr. H. Balfour¹ has also given one or two interesting

¹ H. Balfour, *The Evolution of Decorative Art*, 1891.

illustrations of this process. For example, a stone which suggests a human face is noted by a native and the features are slightly emphasised, and ultimately the object may become a fetich or a charm. The mandrake (*Mandrægora*) is very important in sympathetic magic,¹ and its human attributes have been suggested by the two roots which diverge from a common underground portion, and which recall the body and legs of a man; a slight amount of carving will considerably assist nature and a vegetable man results.

Suggestion does not operate only at the inception of a representation or design, but it acts continuously, and may at various times cause strange modifications to occur.

Expectancy, as Dr. Colley March has pointed out, has been a very important factor in the history of art. This is intimately connected with the association of ideas. If a particular form or marking was natural to a manufactured object, the same form and analogous marking would be given to a similar object made in a different manner, and which was not conditioned by the limitations of the former. For beautiful and convincing illustrations of the operation of this mental attitude of expectancy the reader is referred to the section on skeuomorphic pottery (p. 97).

We may regard suggestion and expectancy as the dynamic and static forces operating on the arts of design; the former initiates and modifies, the latter tends to conserve what already exists.

It is the play between these two operations which gives rise to what may be termed a distinctive "*life-history*" of artistic representations.

A life-history consists of three periods: birth, growth, death. The middle period is one which is usually marked by modifications which may conveniently be grouped under

¹ P. J. Veth, "Die Mandragora," *Internat. Arch. für Ethnogr.*, vol. VII, 1894, p. 199 (with references to the literature).

the term of evolution, as they imply a gradual change or metamorphosis, or even a series of metamorphoses.

For our present purpose we may recognise three stages of artistic development—origin, evolution, and decay.

The vast bulk of artistic expression owes its birth to realism; the representations were meant to be life-like, or to suggest real objects; that they may not have been so was owing to the apathy or incapacity of the artist or to the unsuitability of his materials.

Once born, the design was acted upon by constraining and restraining forces which gave it, so to speak, an individuality of its own. In the great majority of representations the life-history ran its course through various stages until it settled down to uneventful senility; in some cases the representation ceased to be—in fact it died.

In the following pages I shall endeavour to trace the life-history of a few artistic ideas as moulded by suggestion and expectancy along the lines of the four needs, and I have attempted in the accompanying diagram to visualise this method of studying art.

It will be found that the decorative art of primitive folk is directly conditioned by the environment of the artists; and in order to understand the designs of a district, the physical conditions, climate, flora, fauna, and anthropology, all have to be taken into account; thus furnishing another example of the fact that it is impossible to study any one subject comprehensively without touching many other branches of knowledge.

All human handiwork is subject to the same operation of external forces, but the material on which these forces act is also infinitely varied. The diverse races and people of mankind have different ideas and ideals, unequal skill, varied material to work upon, and dissimilar tools to work with. Everywhere the environment is different. So we get that bewildering confusion of ideas which crowd upon us

ART.					EXPLANATION.		WEALTH.		RELATION.
Disproportion of Physical Art through fashion, present copying.	Conventionalism through Decorative Purposes.	Singletons through repeated copying.	Decorations resulting from the Mosaic in Art.	Alphabetical Signs.	Arbitrary signs.	Personal and "Typical" Signs or Symbols.	Personal Emblems and Utilitarian Emblems or Signs.	Money.	
Pictures.	Groups.	Series or patterns.	Caricatures or Buffooneries.	Phonograms.	Emblems or Altered Pictographs.	Religions.	Emblems of Useful Objects.	Means or Less Conventional Models of Useful Objects.	Symbolism and Conventionalism.
Solitary Decorative Elements.					Pictographs.		Useful Objects.		Functions.

DIXON. KNOWLTON.

STAGES OF DEVELOPMENT.

REALISM.

when inspecting a large ethnographical collection or a museum of the decorative arts.

The conclusion that forced itself upon me is that the decorative art of a people does, to a certain extent, reflect their character. A poor, miserable people have poor and miserable art. Even among savages leisure from the cares of life is essential for the culture of art. It is too often supposed that all savages are lazy, and have an abundance of spare time, but this is by no means always the case. Savages do all that is necessary for life; anything extra is for excitement, aesthetics, or religion; and even if there is abundance of time for these latter, it does not follow that there is an equivalent superfluity of energy. The white man, who has trained faculties and overflows with energy, is apt to brand as lazy those who are not so endowed. In the case of British New Guinea it appears pretty evident that art flourishes where food is abundant. One is perhaps justified in making the general statement that the finer the man the better the art, and that the artistic skill of a people is dependent upon the favourableness of their environment.

The relation of art to ethnology is an important problem. So far as our information goes, it appears that the same processes operate on the art of decoration whatever the subject, wherever the country, whenever the age—another illustration of the essential solidarity of mankind. But there are, at the same time, numerous and often striking idiosyncrasies which have to be explained. Many will be found to be due to what may be termed the accidents of locality. Natural forms can only be intelligently represented where they occur, and the materials at the disposal of the artist condition his art.

The ethnological aspect of decorative art is too complex a problem to be solved at present, as sufficient data have not yet been collected. So far as I am aware, Dr. H. Stalpe of Stockholm was the first to seriously attack this subject. It was not until I had definitely entered on the same line

of research that I found I was following in the footsteps of the Swedish savant; fortunately, our work did not really overlap.

I have elsewhere¹ thrown out the following suggestion:—"It will often be found that the more pure or the more homogeneous a people are, the more uniformity will be found in their art work, and that florescence of decorative art is a frequent result of race mixture." For although prolific art work may be dependent, to some extent, upon leisure due to an abundance of food, this will not account for artistic aptitude, though in process of time the latter may be a result of the employment of the leisure; still less will it account for the artistic motives or for the technique.

The art of a people must also be judged by what they need not do and yet accomplish. The resources at their command, and the limitations of their materials, are very important factors; but we must not, at the same time, ignore what they would do if they could, nor should we project our own sentiment too much into their work. In this, as in all other branches of ethnographical inquiry, we should endeavour to learn all we can about them from their own point of view before it is too late. At the present stage knowledge will not be advanced much by looking at laggard peoples through the spectacles of old-world civilisation.

¹ *Illustrated Archaeologist*, vol. I, 1893, p. 108.

DECORATIVE ART OF BRITISH NEW GUINEA.

As stated in the Introductory section, we will commence our studies of the art of existing savages by a brief account of the decorative art of a limited area rather than wander over the earth's surface in order to cull random examples of ornamentation. It is not sufficient to collect patterns or designs in illustration of a theory; in pursuing such a course one is, so to speak, as likely to gather tares as wheat, and they may become inextricably mixed. In my studies I have preferred to limit myself for a time to one particular district, and to gather together all the available material from that locality. The region selected was British New Guinea. By putting together all the objects in our possession known to come from any one locality, I found that the technique of the decoration and the style of the ornamentation were characteristic. It soon became apparent that British New Guinea could be divided into several artistic regions; and so it became possible to allocate to a definite district objects in museums whose exact locality was unrecorded. But this is not sufficient; it is one thing to allocate a particular pattern or group of patterns and designs to their place of origin, but quite a different matter to trace out the history or significance of the ornamentation.

In some cases the origin of a design is obvious on the face of it; in most it is easy to suggest an origin; in others even the most fertile imagination is at fault. In studies

such as these the investigator should restrain from theorising as far as possible; it is a dangerous game, for more than one can play at it, and the explanation is as likely to be wrong as right. The most satisfactory plan is to gather together as much material as possible, and it will generally be found that the objects tell their own tale, and all that has to be done is to record it. When the meaning is not plain, the fault lies in the imperfection of the series, unless very great conventionalisation has already occurred, and it is wiser to wait for authoritative information than to theorise.

One great advantage in the method of confining attention to a limited area is that similar designs very probably have a genetic connection, whereas this is by no means the case if objects from different regions are compared together.

I have recently¹ published a somewhat detailed study of the decorative art of British New Guinea, to which I may refer the reader who desires to enter into more minute details. In the following account I shall first sketch the main characteristics of the art of each æsthetic region, and finally I shall discuss the influences which act on the decorative art of these and other districts of New Guinea.

¹ *The Decorative Art of British New Guinea: A Study in Pagan Ethnography*, Cunningham Memoir, No. 2, Royal Irish Academy, 1894.

I.—TORRES STRAITS AND DAUDAI.

THE natives who inhabit the islands of Torres Straits are a black, frizzly-haired, excitable people, and therefore belong to the Papuan, as opposed to the Australian stock.

Daudai is the native name for the contiguous coast of New Guinea, and it forms with the islands one ethnographical province. Between their respective inhabitants was a regular trade, chiefly in canoes, bows and arrows from the mainland, and in turtle-shell, pearl shell, and other marine shells from the islands.



FIG. 1.—Bamboo tobacco-pipes; one-tenth natural size. Torres Straits.
Drawn by the author from specimens in the British Museum.

Unless otherwise stated, the following description applies to objects from the Torres Straits islands, the natives of which appear to be rather more artistic than those of Daudai.

There are two methods of decorating smooth surfaces—(1) by carving the pattern, the intaglio portion of which is often filled up with powdered lime (Fig. 2); or (2) the design is engraved on the surface of the object by means of fine punctate or minutely zigzag lines (Fig. 5). The former method is alone applied to wooden objects, and also mainly to those made of turtle-shell ("tortoise-shell"); the latter is

that employed on bamboo pipes and on many turtle-shell objects. Unbroken lines are very rarely engraved.

It is characteristic of this district that the patterns are inscribed within parallel lines, whether it be a comb (Fig. 2) or a bamboo pipe (Fig. 1) which is to be decorated. The parallel lines are first drawn, and then the pattern is delineated. A noticeable peculiarity is the preponderance of straight or angled lines to the exclusion of curved lines. Simple semicircular curves and circles are common, it is true, but they are not combined into curved patterns; reversed or looped coils and complex curved lines, such as scrolls, are completely absent.



FIG. 2.—Rubbing of the handle of a wooden comb; one-half natural size. Torres Straits. In the author's possession.

The most common pattern is the ubiquitous zigzag, and this is pre-eminently characteristic of this region. The zigzag may appear as an angular wavy line, or each alternate triangle may be left in relief or emphasised by parallel lines, thus forming a series of alternate light and dark triangles, or what is sometimes termed a tooth pattern. It is obvious that when several rows of this pattern are drawn, a triangle of one row will so coincide with that of the contiguous row as to form a diamond or lozenge. Strange as it may seem, it appears that this is the actual way in which even such a simple form as the lozenge was discovered in this district. Even now, after generations upon generations of designers carving the same simple patterns, the lozenge is very frequently made by drawing a median

horizontal line parallel to the boundary lines and then cutting a more or less symmetrical triangle on each side of it (Fig. 2, third and fifth bands). A herring-bone pattern (Fig. 2, fourth band) and a few simple combinations of

straight or angled lines complete the decorative attempts of these people.

We often find that a feeling for symmetry prompts the artist to more or less design his patterns with regard to the middle-line, although the latter may not be indicated as such. The same can be said of the examples of this.

It must not be imagined that these people do not employ curved lines in their patterns because they cannot draw them. On the contrary, when they wish to represent animals, they can do so with spirit and truthfulness. The accompanying illustration (Fig. 3) demonstrates a fair amount of skill and a faculty for seizing upon the salient features of the animal to be drawn. The diversity of animals is also noteworthy. Nearly every great group of animals is represented in native art, and often so faithfully that it is possible for the naturalist to give the animals their scientific names.

Fig. 3 illustrates some of the animals delineated by the natives of Torres Straits. On looking over the rubbings and tracings of animal drawings from this district which I have collected, I find that over twenty different kinds of animals are represented. Like the ancient Peruvians, they have not disdained to copy jelly-fish (A) and star-fishes (B); the former appears to be a medusoid belonging to the *Leptomedusae*. The remarkable hammer-headed shark (C) is often represented by these people; the group of two sharks and a turtle (D) occurs on one of a series of pearl shells which are fastened to a band; (E) is probably an eagle-ray; the strange sucker-fish, which is used in fishing, is shown in (F), the mouth, however, is on the opposite side of the body to the dorsal-sucker; (G) is a green tree-frog, the sucker-bearing toes are indicated in a generalised manner; this is one of two frogs which are placed in the same position on a bamboo tobacco-pipe, as are the two snakes (H) on another pipe (cf. Fig. 1); the black disc between them indicates the hole in which the bowl is inserted. A

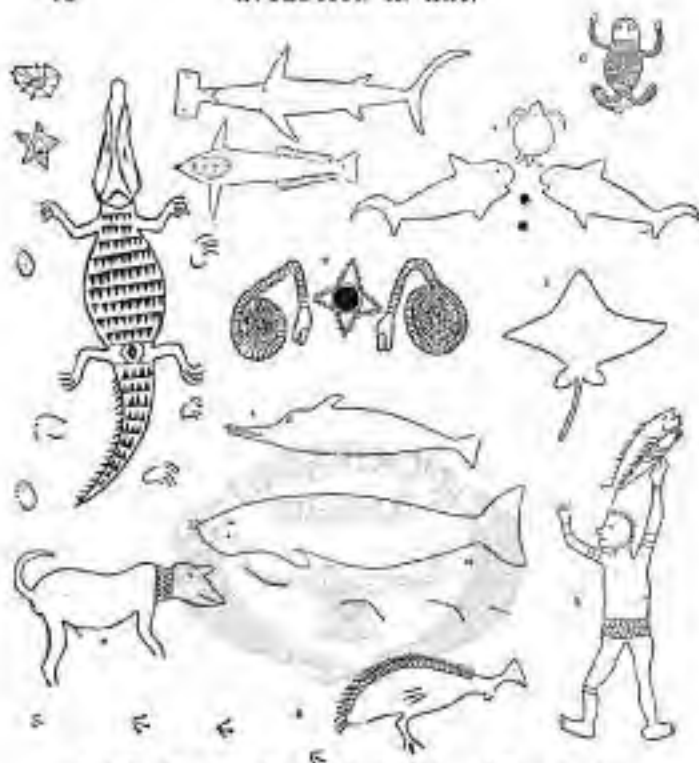


FIG. 3.—Drawings of animals by the natives of Torres Straits : one-quarter natural size.

A. Jelly-fish; B. Star-fish; C. Hammer-headed shark (*Zipernow*); D. Group of two sharks (*Chondrodon*) and a turtle; E. Eagle-ray (*Aetobatus*); F. Sucker-fish (*Rekinier maurer*); G. Tree-frog (*Hyla arborea*); H. Two snakes on a tobacco-pipe, between them is the hole in which the bowl is inserted; I. Crocodile (*Crocodylus porosus*), with foot-prints; K. Cassowary (*Cassuarina*) pecking at a seed [the latter is unfortunately omitted in the figure], and foot-prints, cf. Fig. 4; L. Dolphin (*Delphinus*); M. Dugong (*Halocore australis*) spearing, and indications of waves; N. Native dog (*Canis dingoo*); O. Man with a large mackerel-like fish.

A, B, G, H, I, occur on bamboo tobacco-pipes; C, E, J, K, M, N, O, on drums; D, F, on pearl shells.

A, B, E, F, I, L, N, O, British Museum; C, J, K, Cambridge; G, Oxford; D, F, Berlin.

crocodile is seen walking along the ground at (i), and a cassowary (k) is pecking at a seed; its three-toed tracks are also shown (cf. Fig. 4); (l) is a cleverly drawn dolphin, and (m) is a dugong spouting, and below it the waves are indicated. The native dog, or dingo, is shown at (n), and (o) is a man who has caught a large mackerel-like fish; his belt, arm- and leg-bands are indicated.

As is to be expected among an insular people who are continually on the sea, there is a preponderance of marine forms.

It is somewhat remarkable that no case is known of the delineation of animals in a linear series, or grouped in any way. They are all scattered about on the objects decorated with them. The only exceptions to this rule are in the cases of the drums, pipes, or in a few other objects; in these

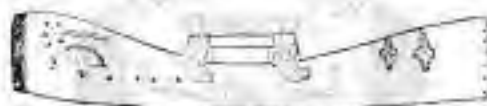


FIG. 4.—Drum from Dauli; 37½ inches long. Sketched by author from a specimen in the Cambridge Museum.

two precisely similar animals are symmetrically disposed with regard to the middle line. For example, in the lower pipe of Fig. 1 a snake will be seen near the left-hand end, immediately below the orifice, for the insertion of the bowl of the pipe, and there is a corresponding snake on the opposite side. I have also noticed a similar paired arrangement of the backs of four old women. Two women had scarified upon them a pair of dugong, one a pair of snakes, and the fourth a pair of objects, which I believe indicated the sting-ray; now these are three of their totem animals, and the scars upon the women's backs indicated the clans to which they severally belonged. As the paired animals on the drums (Fig. 4) and pipes (Fig. 1, c), etc. (Fig. 3), are known to be totem animals, it appears probable that the

symmetrical disposition of two animals among these people indicate that they are totem animals, and marks the object, or rather its owner, as belonging to a particular clan. This paired arrangement strangely recalls the "supporters" of our armorial bearings, and there is reason to believe that these perpetuate in some instances the totem animals of our savage forefathers.

Another point is worth mentioning. Many of the drums have engraved on each of their sides the representation of a cassowary (Fig. 4). I understood that in Mer (Murray Island) only certain people could beat the drum; thus it would appear that throughout this district the men of the cassowary clan, at all events, were the musicians.

Like many other savages, these people are more expert in depicting animals than men, and the human form is rarely copied. Human faces are, however, very frequently represented in the wooden and turtle-shell masks for which the Torres Straits natives are famous, and small wooden human figures were carved on arrows from the mainland, or as wooden or stone images to act as charms. For analogous purposes models of dugong and turtle were carved in wood, and many of these are really skilfully executed works of art, while others are merely conventional renderings, with a minimum amount of labour expended upon them.

The great dance-masks, to which mention has just been made, are sometimes very elaborate objects, and the animal forms, which are often used in combination with the human face, are doubtless symbolic, but of their meaning we are ignorant. Various sharks, such as the hammer-headed shark and the saw-fish, the crocodile and a sea-bird, are very commonly represented.

The association of a human being and crocodile is shown in Fig. 5, which is taken from a rubbing of a bamboo tobacco-pipe (the white spot in the centre indicates the hole for the insertion of the bowl). Only the face and arms of the man are represented. This design is repeated

four times on the same object. The figure also illustrates a concentric treatment of designs which appears to be characteristic of the mainland near the mouth of the Fly River.

From about the same district where the last object came from are made the carved wooden arrows, which are traded by the natives to the islanders of Torres Straits, and which may be found in many of our ethnographical museums. All the arrows formerly used in Torres Straits were imported from the mainland of New Guinea. Of these there were many kinds: some were quite plain, others had simple wooden barbs, while others again had bone barbs; it is only with these latter that I am now dealing.

No two of these arrows are precisely alike, but they fall into four main groups—(1) undecorated, or with an occasional simple band pattern below the barbs; (2) those with the figure of a man carved upon them;



FIG. 5.—Rabbling of part of the decoration of a bamboo (palaeo-*piper*), probably from the mouth of the Fly River; one-third natural size, in the Liverpool Museum. In the original the lines show dark on a light ground.

(3) those with a representation of a crocodile; and finally
 (4) those with simple patterns, which usually have a longitudinal direction.

I will confine myself to the third group, and will illustrate only a few of the numerous variations which occur; these will suffice to indicate what sort of modifications take place, and will enable any one to interpret the carving on the majority of arrows belonging to this class which may be met with in a museum.

The Crocodile Arrow and its Derivatives.—This class of arrows forms a very interesting series, as it becomes greatly modified. At one end of the series we have an easily recognisable crocodile; at the other we have a lizard, or a well-marked snake; and possibly even this may degenerate into the simplest patterns.

(a.) *The Crocodile and its Degenerate Forms.*—In front of the main design there are usually a few barbs, much as in the "man-arrow," but these barbs may be considerably increased in number in the more degenerate type, or they may be altogether absent.

It is desirable to first describe a typical crocodile-arrow; and it will be necessary to call attention to certain well-marked divisions of the total representation: these are the snout, the head and neck (from the eyes, inclusive, to the fore-limbs), the fore-limbs, the trunk, the hind-limbs, and the tail.

(1.) The snout is plain; above, at the anterior extremity, are two elevations, which are meant for the prominent valvular nostrils of the crocodile. Occasionally one is placed behind the other (Fig. 6, A), instead of their being side by side, or even but one may be present. Laterally the jaws and teeth are usually characteristically rendered. In one arrow (Fig. 6, B), the teeth of the upper jaw on one side have, by an easy transition, been transformed into a zigzag line. The underside of the snout and head is ornamented with lines and dots which may have a longi-

tudinal or transverse arrangement, or both may occur, as in Fig. 6, *z*.

(2.) The head and neck, like the snout, are plain above, except for an occasional representation of scales on the neck (Fig. 6, *c*), and the ventral ornamentation is a continuation of that of the underside of the snout. The eye is triangular, with the apex behind, rarely oval, as in Fig. 6, *c*; a band-pattern, usually a zigzag, which is always distinguishable from the ventral ornamentation, extends from the eye to the fore-limb.

(3.) The region of the fore-limb has generally the greatest thickness of the whole arrow. The limbs often arise from an ornamental band (Fig. 6, *a*), which represents the prominent scutes in this region of the real animal. The fore-limbs first project backwardly, and then run forwards towards the middle ventral line. The toes are usually indicated by transverse lines.

(4.) The trunk has usually a row of chevrons or diamonds running along the dorsal and ventral median lines; the lateral ornamentation usually consists of transverse lines, separated by rows of spots; sometimes these run longitudinally.

(5.) The hind-limbs may be separated dorsally by a triangular area (Fig. 6, *a*), or by a row of tubercles (Fig. 6, *z*). The limbs invariably bend forwards, and then backwards. The enclosed angle contains a row of spots or rarely a plain ridge.

(6.) Typically the tail is ornamented with three, occasionally two, dorsal rows of tubercles. The median row is a continuation of the median series, or the triangular area above noted; sometimes the median row is directly continuous with the central series on the back of the trunk. The lateral rows start from the insertions of the hind-limbs (Fig. 6, *a*, *z*, *v*). Beneath there is a large quadrangular plate, ornamented with concentric lines, the sides of which often extend up to the dorso-lateral angle of the tail.

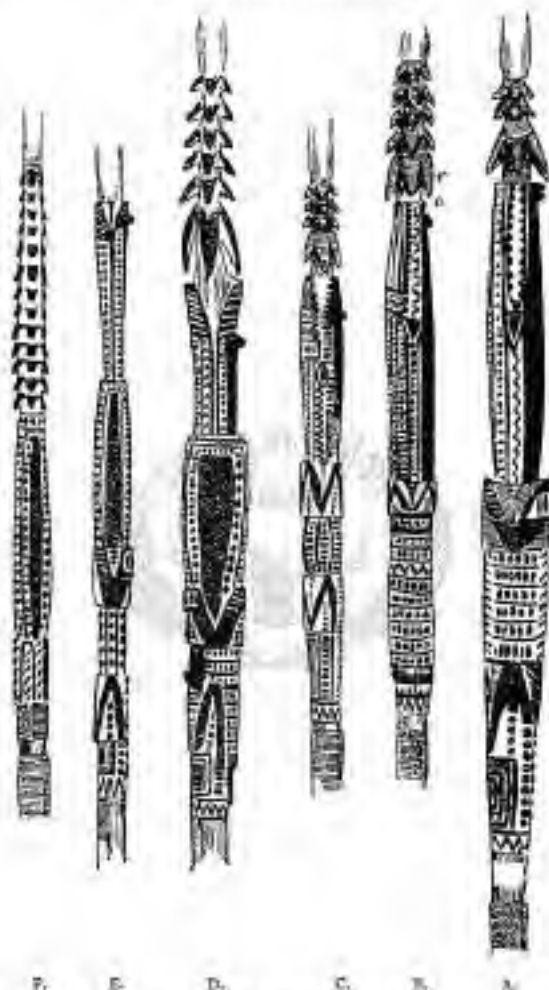


FIG. 6.—Series of arrows from Torres Straits, collected and sketched by the author, and presented by him to the Cambridge Museum; one-third natural size.

On comparing a number of crocodile-arrows with the animal itself, one is struck with the numerous realistic details which have survived the decorative treatment of the design. It must be remembered that one is dealing with a work of decorative art, and not an attempt at realistic carving. In one arrow several anatomical characteristics of the crocodile will be suggestively rendered; in a second other details will be more accurately carved; but in the great majority of arrows belonging to this series, variation has occurred to such an extent that the crocodile becomes almost unrecognisable as such.

A very typical crocodile arrow is to be seen in Fig. 6, a; the chief variation in this is the placing of one nostril behind the other.

In Fig. 6, b, the nostrils are side by side, and the teeth of the upper jaw are represented by a zigzag line. The hind-limbs and the tail are entirely absent.

Fig. 6, c, is important in several respects. The nostril is single, the mouth is partially closed; but the teeth have not, as yet, entirely disappeared from the hinder closed moiety. The eye is oval, a rare feature, and the dorsal scales of the neck are represented; this is also rare. The fore-limbs have been converted into a raised zigzag band, which encircles the arrow. The hind-limbs do the same, except that the pattern is interrupted in the median dorsal line by a double row of tubercles, which represent the prominent dorsal scutes of this region in the living animal. The thigh is carved with a curved upper border and a straight lower border.

There is rather a gap in the series between Fig. 6, c and D; but it is easy to see that the hinder part of the mouth is closed, and the teeth of both jaws are represented by different patterns; the front part of the mouth is widely open, but edentulous. The nostril is single. The eye has become enormously enlarged, and constitutes what I propose to term an eye-panel; it extends backwardly to the

fore-limb. The plain upper surface of the head and neck has become much reduced, owing to the encroachment of a double row of spots on each side. The artist mistook the upper for the lower surface when he carved the fore-limbs, for it will be seen that the toes are above and the dorsal scutes are placed below. Another point of interest is the replacing of the central row of caudal scutes by a plain ridge; so far as I am aware this is unique.

Fig. 6, r, is a type of a large number of arrows. The front open part of the mouth is quite small, and the surfaces of the jaws are scored by oblique lines. The median dorsal plain band of the snout is no wider than the lateral bands which indicate the closed hinder part of the mouth. In the gape of the mouth an elongated triangle is very generally present; this is doubtless intended to represent a tongue. Sometimes it is notched. The eye-panels are elongated and narrow, and the dorsal median band of the head and neck extremely reduced. The rest of the body in this arrow calls for no special mention. Sometimes eyes are carved on the dorsal surface of the gaping end of the upper jaw.

In the last arrow (Fig. 6, r) of the series which I figure, the front part of the mouth has disappeared; but the hinder part of the head is much the same as in the last arrow. The fore-limbs and body are absent. The hind-limbs are narrow, but retain their characteristic forward bend; the dorsal caudal scutes are replaced by numerous parallel transverse lines.

Two features of the innumerable modifications of this design are worthy of special allusion, the one is the remarkable retention of the projecting nostril, which may often be found as a slight prominence in very degraded arrows; and the other is the still greater persistence of the tail and hind-quarters of the crocodile. I suspect that the striking decorative effect of the concentrically marked cloacal plate has

led not only to the retention of that part, but also to that of the neighbouring organs.

(*b.*) *The Snake Variety.*—We now pass on to a small group in which the open front part of the mouth of such an arrow as Fig. 6, 2, has suggested a complete head, and so eyes are added (Fig. 7); the rest of the snout, the head and fore-limbs are omitted; the body is much elongated, but the hind legs and tail are usually quite normal, or subject to merely minor variations; the patterns may run transversely as in the figure, or longitudinally. Such a carving irresistibly calls to mind a snake; the natives themselves told me it was a snake.

The tail and hindquarters, however, proclaim the crocodilian original. In this group of arrows we have a very interesting example of the transition from one kind of animal into another; but hitherto I have not seen a snake-arrow which has lost all trace of its saurian ancestry.

(*c.*) *The Lizard Variety.*—A few arrows are known to me which pretty closely resemble Fig. 6, 2, except that the hind-limbs are elongated and slender, and the tail is not crocodilian. The body is depressed and lozenge-shaped in section. In other words, the body, hind legs, and tail are lacertilian in character. In these arrows, the crocodile has been confounded with a lizard.

Other illustrations of the decorative art of these people will be found in Figs. 44, 66; but as these examples illustrate other aspects of the subject, I have described them in the relating sections of this book and refrain from repeating them here.



FIG. 7.
Snake-arrow
from Torres
Strait (cf.
Fig. 6).

II.—THE FLY RIVER.

THE Fly River is the largest river in New Guinea. It rises from about the area where the Dutch, German, and British territories abut, and flows into the western side of the Gulf of Papua. For a great part of its course it flows through low-lying and often swampy country, which is but sparsely inhabited, except in the delta region. For our present purpose we need only consider the delta and the middle region of the river. Owing to the carelessness of collectors, it is very difficult to determine from what exact district many objects labelled "Fly River" actually come.

The largest island in the delta of the Fly River is Kiwai, and this contains several villages. Almost the only objects which can be safely referred to Kiwai are the tubular drums with "jaws" at one end. There can be but little doubt that the carving represents the head of the crocodile, just as in the large Torres Straits and Daudai drum the "jaws" probably are derived from the same reptile. The carving on the Kiwai drums is boldly executed, and usually filled in with red and white pigment.

So far as I can discover, the etching on the bamboo tobacco-pipes is similar in many respects to that on those from the previous district, but the zigzag lines are usually much coarser, and the punctate line is either rare or absent.

In some of the islands in the delta of the Fly River, at Daumori for example, carved wooden slabs, more or less ovoid in contour, are suspended on the front of a house for good luck; some of these are also employed as figure-heads for canoes to ensure successful voyages. They have carved

upon them conventional human faces, and occasionally whole figures, accompanied by simple patterns.¹

Middle District of the Fly River.—The most extensive collection of objects at present in Europe from the interior



FIG. 8.—Rubbing of one side of the decoration of a drum from the Fly River, in the Museum at Rome; one fourth natural size.

of New Guinea along the Fly River is that in the museum in Rome. These were "collected" by Signor d'Albertis,

¹ I hope to publish shortly a paper in the *Internationale Archiv für Ethnographie*, on the designs which are incised on the skin of these natives.

mainly at what he named "Villaggio dei cocchi," which is probably the same place reached by Sir William MacGregor on January 7th, 1890; it is situated about 380 miles from the mouth of the river.

The drums from this district differ in shape from those from other parts of the Possession, and a somewhat elaborate ornamentation is carved on them in low relief. The means do not at present exist for elucidating the significance of these designs (Fig. 8), which are compounded of crescentic lines, leaf-like and triradiate elements and spirals. Some of the figures certainly look as if they were intended to represent leaves; if this is the case, it may be due to some influence from the north, for we find that leaf-designs are employed in the north of Netherlands New Guinea. Dr. M. Uhlen states that "the influence of the plant ornamentation of the East Indian Archipelago is also found in West New Guinea. Although it is essentially characteristic of the western portion of the East Indian Archipelago, isolated examples are not wanting in the ornamentation of the eastern." He thinks he can trace the plant motive in South-West New Guinea as far as Wamuka River.

The bamboo pipes are also decorated in a characteristic manner, the pattern being caused by a local removal of the skin of the bamboo, so that it shows darker against a light background. There is usually considerably more regularity in the decoration than occurs on the drums.

¹ "Holz- und Ramlus-Geräthe aus Nord West Neu Guinea," *Publicationen aus dem Königl. Ethnographischen Museum zu Dresden*, vi., 1886.

III.—THE PAPUAN GULF.

We have no information concerning the decorative art of the greater portion of the littoral of the Papuan Gulf, but from two rubbings sent to me by my friend, Mr. Robert Bruce, in 1894, it appears that the human face is largely represented. In Fig. 9 we see that simplified faces constitute a pattern which adorns a canoe.

At the eastern side of the bight of the Gulf of Papua there is a very energetic, boisterous people of dark complexion, who inhabit the vicinity of Freshwater Bay. Their



FIG. 9.—Rubbing of part of a carved pattern, along a canoe from near Cape Backwood. Taken by R. Bruce, 1894. One-sixth natural size.

best known village is Toaripi (Motu Mota); the term Elema includes this and other tribes in the neighbourhood.

The district is fertile, wooded, and well-watered. Sago is abundant, and fleets of trading canoes sail annually to and from the Motu tribe of Port Moresby to exchange pottery for sago.

The decorative art of this district is so characteristic that it is impossible to mistake it. Objects of wood are cut in flat relief, and those made of bamboo are similarly treated, the design being emphasised by the colouring of the intaglio. The vast majority of the designs are derived from the human figure, and most particularly the face. There are very few designs which cannot be traced to this origin; occasionally a crocodile or a lizard may be introduced.

The employment of masks during sacred ceremonies, which was such a notable feature of Torres Straits, recurs here also to an equal degree, but instead of the masks being made in wood or turtle-shell, they are constructed of a light framework on which is stretched the inner bark of a tree. The device is outlined by cloisons of the midrib of a leaf, and the figures are picked out in red and black, and the background is usually painted white. This *cloisonné* technique is peculiar to this district, and it appears to have affected also the method of carving patterns in wood.

The form and decoration of these masks is so varied that it would be tedious to describe them. In the majority of them a human face is readily recognisable, but in some of the larger examples it has practically become lost. In nearly all, instead of a human mouth, the mask is provided with a long snout, the jaws of which are usually numerous toothed. There can be little doubt that this represents a crocodile's snout. Almost wherever it occurs, the crocodile or alligator, as the case may be, enters into the religion of people, doubtless, primarily, on account of its size and predatory habits. It is very frequently a totem, as, for example, in Torres Straits, and it is very probable that here also its presence in conjunction with the human form is symbolic of a totemistic relation between the man and the reptile. We know extremely little about the use, and nothing of the significance, of the masks of this region, but it appears that their use is in connection with the initiation of the lads into manhood, and a common feature of initiation is the association of the totem with the individual. Some masks represent what appears to be intended for a pig's head; a bird and other forms may also be introduced. Occasionally a human head may be given to a grotesque animal form.

The shields are oblong or ovoid in shape, and have a central slit cut out at the top. Most of the former are decorated with an easily recognisable human face; some

times the face is doubled, but in these cases it is only the nose and mouth that are repeated, a single pair of eyes having to do duty for the two faces. The faces are subject to considerable modification, the two eyes, or even only a single eye may alone be recognisable.

Characteristic of typical New Guinea villages are large houses which men alone may enter. Here the lads who are being initiated into manhood are lodged, here the masks and other sacred objects are kept; they combine the offices of clubs, guest-houses, and religious edifices. In this district, as well as in the Fly River delta, they are usually decorated with human and animal carvings, and in them are suspended wooden slabs of an elongated oval shape, which are carved in a similar manner to the shields. These tablets appear to be employed as charms for good-luck, but we do not know whether they are also used in the initiation ceremonies; they are decorated with extremely conventional representations of the human form, or may be only a face; sometimes monstrous combinations of a man and animal may be carved.

When men have passed through all the stages of initiation, they are entitled, so Mr. Chalmers informs us, to wear broad, carved wooden belts. These belts encircle the body thrice, and like many other symbols of distinction must be extremely inconvenient to wear. I have made rubbings of quite a considerable number of these belts, and have come across only a few in which human faces could not be distinguished.

The design is so engraved that the pattern is in flat relief; this is kept dark in colour, and shows up against the whitened background. Certain details of the design are often picked out in red, the exposed uncarved portion of the belt and most usually the narrow plain border above and below the pattern are painted red. The design commences at one end of the belt, and terminates when one circumference is nearly attained.

There is a wonderful diversity of pattern in these belts, yet, at the same time, there is a fundamental similarity in the style of the designs which clearly indicates a community of origin. A very considerable proportion of the belts known to me exhibit a true decorative taste on the part of artists, and in some cases pleasing and ingenious patterns have been evolved. It may not be superfluous to point out that, whereas "eye-spots" are usually intended for eyes, they are sometimes employed as an appropriate decorative device; similarly toothed lines may represent human teeth, rarely hair, and not infrequently they are purely ornamental.

I have made a selection of ten of these belts which sufficiently illustrate their character and the sort of modification which occurs. Figs. 17 to 19 are photographed from rubbings of part of the decoration of wooden belts from the Papuan Gulf. Fig. 20 represents the whole of the ornamentation. All are one-fourth natural size.

CLASSIFICATION OF CARVED PATTERNS ON WOODEN BELTS FROM THE GULF OF PAPUA.

Human Face Derivatives.

SERIES I.—UNISERIAL, VERTICAL.

1. Faces looking the same way.
2. Faces alternately looking up and down.

SERIES II.—UNISERIAL, HORIZONTAL.

1. Faces looking the same way.
2. Faces alternately looking towards and away from one another.
 - (a) All faces separate.
 - (b) Faces looking towards one another grouped together.
 - (c) Faces looking away from one another grouped together.

SERIES III.—BISERIAL, VERTICAL.

1. Faces only looking towards one another.
2. Faces only looking away from one another.
3. Faces alternately looking towards and away from one another.
 - (A) All faces of equal size.
 - (B) Faces looking towards one another most prominent.
 - (C) Faces looking away from one another most prominent.

SERIES IV.—BISERIAL, HORIZONTAL.

SERIES V.—TRISERIAL (II + III).

- I. *Vertical faces looking towards one another.*
 1. Horizontal faces looking the same way.
 2. Horizontal faces alternately looking towards or away from one another.
 - (A) All faces of equal size.
 - (B) Vertical faces monopolising pattern.
 - (a) Horizontal faces separate.
 - (b) Horizontal faces looking towards one another grouped together.
 - (c) Horizontal faces looking away from one another grouped together.
 - (C) Horizontal faces monopolising pattern.
 - (a) Horizontal faces separate.
 - (b) Horizontal faces looking towards one another grouped together.
 - (c) Horizontal faces looking away from one another grouped together.

II. *Vertical faces looking away from one another.*

1. *Single row of faces disposed vertically, the faces alternately looking up and down.*

Fig. 10 is a reduced rubbing of the whole of the ornamentation of a belt; to the left will be seen a face



FIG. 10.—Cambridge Museum.



FIG. 11.—Glasgow Museum.

with two eyes, a nose, and a large red mouth beset with teeth. The next face has only one eye, while the other two faces are eyeless, and there is nothing distinctive about their noses.

II. *Single row of faces disposed horizontally.*

(1.) *The faces looking the same way.*—The belt of Fig. 11 has four faces, which are as degenerate as those in the last example; three of these look one way, and the fourth, which is at one end of the pattern, looks in the opposite direction. It is not unusual for a face to be carved at each end of the decorated portion of a belt, and as these faces almost always look towards the pattern, the anomaly of one face in this belt looking a different way from the remainder



FIG. 11.—Kassapa, Berlin Museum.

is apparent rather than real. But the most interesting feature in this belt is the meander or fret pattern. The extremely degenerate face appears to be, as in Fig. 10, a red mouth containing an eye-spot; the central chevron also occurs in Fig. 19, where it represents the nose.

(2.) *The faces alternately looking towards and away from one another.*—I will omit examples in which (a) *all the faces are separate*, and (b) *the faces looking towards one another are grouped together*, and pass on to (c) *the faces looking away from one another are grouped together*. An elegant example of this is seen in Fig. 12. The two pairs of eyes of the two faces which are turned away from each other are represented by a single eye from which a horizontal line extends on

either side to the two mouths; each line represents a nose, the nostrils of which are placed quite close to the eye. The eyes are surrounded by simple red areas. The spaces between the mouths, above and below the eye (speaking in terms of the belt, and not of the faces), are occupied by additional mouths, which are evidently inserted from a sense of symmetry; that they are supplemented, and not essential, is proved by the absence of any nasal line connecting them with the eye. The spirals below each mouth occur on several shields.

An interesting belt (Fig. 13) exhibits quite a different modification of the same motive. The pattern consists of a series of eight-rayed figures with bent arms, and a central



FIG. 13.—British Museum.

eye-spot. A comparison of these figures with the eyes on masks, and other objects from this district, proves that the six rays are but a symmetrical coalescence of two pairs of eye-areas.¹ The angled double lines are clearly those prolongations of the eye-area which in many cases tend to enclose the mouth, and which probably represent the cheek-folds; and thus they demonstrate the interpretation that each star is derived from two horizontal faces which are looking away from each other, and of which nothing remains but a confluent eye-area, enclosing a single eye. The terminal faces are sufficiently normal; but if two such faces were placed back to back, and the eye-areas were

¹ I have adopted the term "eye-area" to denote the eye device, which includes the eye, the eye-fishes, and often the cheek-fold of that side.

confluent, and the four eyes fused into one, and finally the nose and mouth were eliminated, we should have star-like figures resembling those which do occur. If a reflector is placed across the eyes in the terminal face in Fig. 13 (at right angles to the plane of the paper, and across the long axis of the belt) a star-like figure can be seen, which is very similar to those in the rest of the belt. This is one of the few belts that have no border pattern.

III. *Double row of faces disposed vertically.*

(1.) *The faces only looking towards one another.*—In the belt represented in Fig. 14 there is a double row of



FIG. 14.—British Museum.

faces which are placed *vis-à-vis*. The figure illustrates varying degrees of degeneracy in the faces; each space between a pair of faces is occupied by a large red star with a central eye-spot. The representation of a lizard on this belt is noteworthy.

(2.) *The faces only looking away from one another.*—In Fig. 15 it is evident that we have a double series of faces which are placed back to back; the two pairs of eyes are represented by a central eye. The noses and mouths of the different faces are joined together and constitute a fairly regular pattern.

(3.) *The faces alternately looking towards and away from one another.*—In this series the faces may all be equally developed, or those facing one another may be most prominent, or, on the other hand, those looking away from one another may monopolise the design.

A simple modification of the subdivision in which the faces are all equal is to be found in Fig. 16. In this case the two eyes of each face have amalgamated, and a short



FIG. 15.—Tuaripi (Author's Collection).



FIG. 16.—Berlin Museum.

line represents the nose; but their disposition is still typical. The oblique lines uniting the noses are evidently the remains of the mouths of their respective faces; a tooth-pattern may be present or absent. The chevrons merely fill up the vacant angles. The terminal face is represented by a red three-rayed area, containing an eye-spot.

IV. *Double row of faces disposed horizontally.*

No example of this arrangement is known to me.

V. *Treble row of faces.*

This is a composite series which is composed of Series II. and III. It resolves itself into two main groups, the second of which, so far as I am aware, is represented by only a single specimen.

(1.) *Vertical faces looking towards one another.*—Owing to the variety of their component elements the patterns in this series of belts are liable to considerable variation, but there is no need to enter into an analysis of the possible modifications.

In Fig. 17 we have an example of the preponderance of the horizontal faces, while some of the vertical faces are extremely degraded.



FIG. 17.—Malwa, Berlin Museum.

Fig. 18 represents a condition in which the vertical faces are monocular; the line beneath the eye is evidently the suggestion of a nose, and the angled dentate line indicates the mouth with its teeth. All these faces are equally developed. The horizontal series of faces belong to Series II, 2, A, as the faces looking towards one another are grouped together. In the centre of each space between a pair of vertical faces is a mouth which has to do

duty for two horizontal faces; on each side of this is a horizontal line which is a vestigial nose, the arrow-head figure on which indicates the nostrils. The eye between the mouths of the vertical faces represents two pairs of eyes of the horizontal series.



FIG. 18.—Edinburgh Museum.

(II.) *Vertical faces looking away from one another.*—The only belt with which I am acquainted which probably belongs to this subdivision of the series is that reproduced in Fig. 19. The design is more regular and sustained than is usually the case on these belts. The vertical series of faces is represented by a median series of fused mouths and eyes; the chevron band indicates the nose, on which nostrils may be located close to the mouth or close to the eye. The eyes of the vertical series of faces are enclosed within confluent eye-areas; the median nose-line runs to the border pattern of the belt, but there is no trace of a mouth. The border pattern is, I believe, unique on belts.

The bamboo tobacco-pipes are ornamented by scraping away some of the rind of the bamboo and colouring the intaglio portions with brown pigment; in these also the designs are based on human faces and their derivatives; sometimes the human form is employed, and occasionally zoomorphs are depicted.

It would be tedious to describe all the objects which are decorated by these artistic people; enough examples have been given to illustrate the style of their art. We cannot

at present say why anthropomorphs should predominate in so marked a degree. I suspect it has something to do with the importance of initiation ceremonies combined with the ancestor cult, which is a marked feature of the true Papuans.



FIG. 19.—Museum of the London Missionary Society.

I would also hazard the conjecture that animal totemism is not of such prominence amongst these people as it was recently in Torres Straits, and still is on the neighbouring coast of New Guinea and in Australia.

IV.—THE CENTRAL DISTRICT.

IN Yule Island, and in the vicinity of Hall Sound, and right away down the coast of New Guinea as far as Cloudy Bay, we come across a fairly uniform and rather uninteresting type of decorative art.

The designs are burnt into bamboo tobacco-pipes or gourds, "with a glowing slice of the sheathing leaf of the coco-nut kept almost at a white heat by the native artist blowing upon it. The end of the glowing ember forms a fine point, which on being slowly moved along the desired lines leaves indelible tracks." (Lindt, *Picturesque New Guinea*, 1888, p. 34.) In Cloudy Bay the natives scratch the design on the rim of the bamboo before charring it; this tends to limit the burning, and to give a hard edge to the lines. Here also the designs run along the length of the pipes in distinct bands; in other parts of the Central District longitudinal bands are broken by encircling bands, and are often replaced by panels.

The employment of isolated, rectangular panels is very characteristic of this district. On such objects as tobacco-pipes the panels must from necessity follow one another more or less serially, but they need not be co-ordinated into a definite pattern. When larger surfaces are ornamented, as, for example, the bodies of women (Fig. 20, A, B), the panels may also be somewhat irregularly disposed; but there is a tendency, at all events in some places (as in the figure), for the designs to have an orderly and sym-

metrical arrangement, but in no case is there absolute symmetry.

A common form of panel is the Maltese cross (Fig.



FIG. 29. A.—Drawing of Tolata,
a Motu girl, by Rev. W.
Y. Turner, M.D. (from
Journ. Anth. Inst., vii.,
1878, Fig. 4, p. 480).

B.—Back view of the
same. (The hair of this
girl is incorrectly drawn,
it should be frizzly and
not wavy.)

21, u, t); perhaps it would be more accurate to describe it as a light St. Andrew's cross on a dark rectangular panel. A combination of light St. George's and St. Andrew's crosses

on dark fields is very frequent; the arms of the latter cross often become leaf-like, and may monopolise the field. (Fig. 21, E, F.) Some travellers have suggested that these designs are derived from the Union Jack, but this is not the case. Another kind of panel is that shown in Fig. 21, G. Fig. 21, D, illustrates one form of a common type of band pattern.

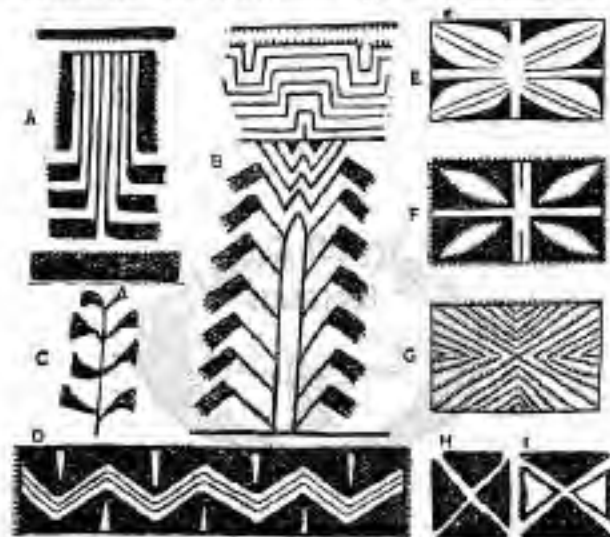


FIG. 21.—A, Design on a line-gourd from Kerepuru; B, Part of the decoration of a pipe from Malva; C, Detail on a pipe from Kipale, in the Berlin Museum; D-I, Designs on pipes—G from Kipale (Berlin), H, I, from Koiari (Berlin). All the Figs. are to different scales.

One of the most widespread of the isolated designs is that shown in Fig. 21, A, B, and Fig. 22, but it is subject to many variations. Similar designs are tattooed on people below the armpit or on the shoulder. Now that attention has been called to this and other designs, we shall probably learn what significance is attached to them. Occasionally

we find what appear to be undoubted plant motives on pipes and other objects from this district, as, for example, on a pipe from Kupole in the Berlin Museum (Fig. 21, c), and it is probable that the designs just alluded to are also plant derivatives.

Throughout this district, especially along the coast, the women are tattooed, and in some localities they are entirely covered with tattoo marks. The men are much less tattooed than the women.¹ The designs employed are for the most part the same as those used to decorate pipes and gourds. The angled design tattooed on the chests of women (Fig. 20, A, 8) is found on a pipe in the Cambridge Museum. (Fig. 22.)

Noticeable features in the decorative art of this district are the preponderance of straight lines over curved lines; as well as the occurrence of dotted lines and of very short lines, which form a kind of fringe to many of the lines. (Figs. 21, 22, 51.)

Very remarkable also is the absence of the delineation of the human or of animal forms. Bounded on the north-west* by a luxuriant art based on human faces and forms, and limited to the south-east by bird-scrolls and bird and crocodile derivatives, not



FIG. 22.

Part of the decoration of a pipe in the Cambridge Museum; consists natural size.

¹ According to Mr. A. C. English, Government Agent for the Rigo District, among the Sinuigold tribe, the design Fig. 21, D, is called *welapafu*, and is tattooed on both sexes as a distinction for taking life; Fig. 21, A, 1, *Améir*, have a similar value; the angled chest-marks (Fig. 20, A, 8) are called *dearoké*. (*Ann. Rep. British New Guinea*, 1893-94, pp. 68, 69.)

to mention human effigies and representations of various animals, these central folk are unaffected by these two very distinct forms of artistic activity. The only exceptions, so far as my evidence goes, is in the transitional country north of Hall Sound, and a few carvings of crocodiles in certain tabu houses or *dubut*.

The rigid conservatism of the native mind is the sheet-anchor of the ethnographer; no better example of this mental rigidity is needed than is supplied by the Motu people who live in the vicinity of Port Moresby. The women make large quantities of pottery, which the men trade for sago up the Papuan Gulf even to a distance of two hundred miles. Three or more canoes lashed together and fitted with crates constitute a trading canoe or *lakatoi*. A fleet of twenty *lakatoi* carrying about six hundred men, each of whom would take about fifty pots, has been known to sail from Port Moresby. The 20,000 or 30,000 exported pots will bring in exchange a cargo of 150 tons, or more, of sago. Notwithstanding this great annual trading, the decorative art of the Motu is absolutely untouched by that of the Gulf natives, or *vice versa*; the artistic motives, scheme of decoration, and technique are entirely different.

It seems probable that many of the decorated objects that are labelled in European museums as coming from this district are the work of the hill tribes, or of that coast population which does not belong solely to the Motu and allied tribes.

V.—THE MASSIM DISTRICT.

THE country at the extreme south-east end of New Guinea round Milne Gulf, together with the neighbouring groups of islands, constitutes a natural province to which I have proposed to extend the name Massim. For the history of this term the reader is referred to Professor Hamy's paper, "Étude sur les Papouas de la Mer d'Entrecasteaux" (*Rev. d'Ethnogr.*, vii., 1888, p. 503). The various archipelagoes which collectively constitute this district are—(1) The Moresby Group, including all the islands between Milne Gulf and Wari (Teste Island); (2) the Louisiade Group, including Misima, Tagula (Sudess), and all neighbouring islands; (3) the D'Entrecasteaux Group, including Duau (Normanby Island), Goodenough, and the other islands; (4) the Trobriand Group, the largest island in which is Kiriwina; and (5) the Woodlark Group (Murua, etc.), and including Nada (the Laughlan Islands). There is a considerable amount of indigenous trade between these islands. For example, the Nada folk make annual trading voyages to Murua to exchange coco-nuts for taro. Dr. Finsch says (*Samoafahrten*, 1888, pp. 207-209), "A great many objects (such as the beautiful lime calabashes) are bartered from the Woodlark Islands, the inhabitants of which with their large sea-going canoes undertake extensive trading voyages. . . . At all events Trobriand is visited from Normanby, Welle [a small island close by the latter] and Woodlark Islands, for the Trobrianders themselves probably do not undertake trading voyages." In describing the manufacture of earthen pots at Wari (Teste Island), Finsch says (*Samoafahrten*, p. 281) the upper border of these pots

"exhibits various simple band patterns which are scratched with fork-like bamboo instruments, and which serve not for ornament but as trade marks. Thus here also each woman has her own mark with which she signs her fabrication. The pottery has an extended sale as far as the D'Entrecasteaux and to Chads Bay, South Cape, Woodlark Island, and perhaps also to the Louisiades." In my *Memoir* (p. 223)



FIG. 23.—Clay pot with an incised band pattern, from Wari (Taste Island). Forbes's sketches, (Fig. 23.) after a sketch by Dr. H. O. Forbes.

I have included a MS. description of the manufacture of pottery in the same island, which was kindly placed at my disposal by Dr. H. O. Forbes,

The Wari people have to import wood for their houses, and also, like the natives of the Engineer Group, who are great traders, they procure canoes from Pannact (Deboyne Island). Owing to the trading which occurs amongst these islands and with the mainland, it is very difficult to determine from specimens of native work in European collections what style of work is characteristic of each of these groups, especially as comparatively few specimens are properly labelled. I have, however, but little doubt that each group has characteristic designs and forms, and possibly in some cases these may be peculiar to them.

Throughout the whole of this district one finds lime-spatulas,¹ wooden clubs, canoe carvings, and other objects

¹ Southward of the Euphrat Gulf, and in all the islands of the south-eastern extremity of New Guinea, the natives chew the betel-nut, and when chewing transfer quick-lime from gourds ("lime-gourds") to their mouths by means of flat carved sticks ("lime-spatulas"). These vary greatly in form and in the character of their carving. The intaglio is filled in with lime, so that the design appears white on the polished ebony handles. These objects are often called "chunam spoons," but they are never spoon-shaped, and there is no need to introduce an Anglo-Tamil word for lime.

ornamented with scrolls. Nowhere else in British New Guinea do we find the continuous loop coil pattern, the guilloche, or loop coils. The spiral is absent from the Torres Straits and Daudai, but present up the Fly River and in the Papuan Gulf. It is absent again in the Central District, but reappears in the Massim Archipelagoes. It is only in the last district that we meet with a wealth of curved lines. What is the meaning of this?

All over this district we find decorative art permeated with the influence of the frigate bird. This beautiful bird is the sacred bird of the West Pacific. I shall allude to it again in a later section. The bird, or its head only, is often carved more or less in the round, especially for the decoration of canoes.

It must, however, be remembered that such representations are conventional and not strictly realistic.



FIG. 24.—Rolling of the half of one side of the handle of a spatula in the author's collection; smoothed natural size.

The same head is repeated on the handle of a spatula (Fig. 24), the curved tip of the beak of one bird forming the head of the bird immediately in front of it. From this simple origin the varied and beautiful scroll patterns have been developed. One important factor in the evolution of this pattern has been the confining of the design within narrow bands. When a band happens to be exceptionally broad, one often finds that the pattern becomes erratic. Queer contained designs also result from the attempt to cover a relatively broad



FIG. 25.—Drawings of both sides of a fish for a fishhook; one-half natural size.

area, as in Fig. 25. Here there is nothing to guide or restrain the artist, except the boundary of the field; but on canoe carvings and some other objects there are usually



FIG. 26.—Raiding of upper two-thirds of the decoration of a club, in the Glasgow Museum; one-third natural size.



FIG. 27.



FIG. 28.



FIG. 29.



FIG. 30.

Raidings of part of the decoration of clubs; one-third natural size, Figs. 27 and 28, D'Entrecasteaux, Edinburgh Museum; Figs. 29 and 30, Cambridge Museum.

structural or vestigial features, round which the design may be said to crystallise, and in these cases the pattern is approximately or entirely symmetrical.

The triangular spaces left above and below the beaks in the bird-scroll pattern are usually more or less filled up with crescentic lines, as in Fig. 26. Sometimes they are blank, and in this case the triangles may be coloured red instead of the white line which is rubbed into the carving. The eyes of the birds are, as often as not, omitted altogether. (Figs. 27-30.) Their presence seems to have a conservative effect on the design, for where absent the elements of the design may slip upon or run into one another.

In Fig. 27 we have a good example of what I mean by the slipping of the elements of the design, with the result that a guilloche is arrived at. It will be noticed in this figure that the ends of the curved lines are mostly joined by an oblique bar. These oblique bars have become emphasised in Fig. 28, and a degeneration of the curved lines results in a simple pattern.

An example of the elements of the design running into one another is shown in Fig. 29, which, like the last two figures, is a reduced rubbing of part of the decoration of a sword-shaped wooden club. The band, shown in Fig. 30, is on the handle of the same club; the central pattern is clearly a simplification of that on the blade of the club, and it passes naturally into the zigzag carried below it.

In a carved border round the top of a beetle-pestle (Fig. 31) the bird's-head scroll has become simplified, and at the same time developed into a more convolute scroll. A very degraded example is seen in the upper band of Fig. 32.

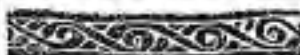


FIG. 31.—Rubbing of the pattern round the upper margin of a beetle-pestle in the Cambridge Museum; excellent natural use.

It would be easy to multiply examples of simple and complex derivatives of the bird's-head motive, but these

few will serve to demonstrate the kind of modifications which occur.

Instead of only the head with its beak, the neck of the bird may be introduced. Fig. 33 is from a rubbing of a beautiful spatula in the British Museum, carved in turtle-



FIG. 32.—Rubbing of part of the curved rim of a wooden bowl from the D'Entrecasteaux Islands; one-third natural size.



FIG. 33.—Rubbing of the handle of a turtle-shell spatula, from the Louisiades, in the British Museum; one-half natural size.

shell (tortoise-shell); in it will be seen the interlocking of birds' beaks and of birds' necks. If the interlocking beaks were isolated we should get the band pattern which runs along the concavity of the crescentic handle.

The birds' heads and necks are usually confined to bands, and the design becomes subject to a new set of influences.

A careful inspection of Fig. 34 will give the key to many details that may be found in carved objects from this district. In the band immediately below the central band are seen the heads and necks of three birds which have already undergone a slight transformation. In the corresponding band above the central band a bird is readily recognisable, but those on each side of it have degenerated into looped coils. The other designs can easily be recognised as bird derivatives.



FIG. 34.—Rending of the decoration of one side of a club; one-third natural size. The block is turned round to show the pattern more clearly, the zig-zag bands in reality run across the blade of the flat club.

The birds' heads and necks may be so arranged in a linear series that interlocking takes place. In some cases one can distinguish between the heads and the necks; in others, as, for example, in the outer bands of Fig. 35, this is



FIG. 35.—Rending of the handle of a spear in the British Museum; one-third natural size.

impossible. The interlocking of the heads or necks, as the case may be, and the isolation of the involved parts, has given rise to the central pattern on this spear. Simple or complex coils like the last are of frequent occurrence in decorated objects from these islands. Both kinds of coil are found in Fig. 34, and by far the greater number of them can be proved to be bird derivatives.

The eyes of the heads in such a pattern as the two outer

with the design in the right-hand lower corner of Fig. 39, where further simplification has occurred. The mark in the centre of the design is the relic of the four which occur in the last figure, and these are the disrupted remains of the beaks of the two birds. The other spirals in this figure are serial repetitions of the involved bird's eye of the lower



FIG. 38.



FIG. 39.

FIGS. 38 and 39.—Kullings of the *Glossators* of clais in the Dublin Museum; one-third natural size.

design; the limitation of these within narrow bands causes their elongation, and from these we are led to the concentric ovals. All the concentric ovals met with in this district may not have been arrived at in this manner, but those in Fig. 39 appear to have had this origin.

To return again to Fig. 37, in *a* and *b* we have two phases of the bird-bracket on spatulas; *c* and *d* are

analogous designs in which the birds' beaks are also united; these are details from canoe carvings.



FIG. 40.—Rubbing of the central longitudinal head of a club from the D'Entrecasteaux, in the Edinburgh Museum; one-third natural size.



FIG. 41.—Rubbing of part of the decoration of a club from the D'Entrecasteaux, in the Edinburgh Museum; one-third natural size.

A simplified type of bird's head and neck is seen in Fig. 40. Probably, owing to the narrow space at his disposal, the artist omitted the typical curvature of the beak. In the centre of the band a looped arrangement is to be seen. It is very tempting to imagine that the central band of Fig. 41 has had a similar origin. It is possible, however, that it may be an aberrant modification of the serial bird's head design. I have no doubt that it is a bird derivative.

In this district, but principally, I believe, on the mainland and in the neighbouring islands, we find carvings which represent a bird and a crocodile; often this design forms the handles of paddles, spatulas, and axes (Fig. 45, A). I have not at present direct proof that the animal is a crocodile, but I have sufficient evidence to warrant the assumption.

With but very few exceptions the bird has a hooked beak; often it is provided with a crest. Normally it has a body and wings, but never any legs. Only the head with the eye, jaws, and tongue of the crocodile are carved. The bird is undoubtedly based on the



FIG. 42.—Bird and Crocodile designs, Mexican Archaeology.

- A. Canoe carving from Wari (Tzuc Island) about two-ninths natural size.
- B. Handle of a paddle in the Cambridge Museum; one-half natural size.
- C. Handle of a spatula in the Leyden Museum; three-sevenths natural size.
- D. Handle of a spatula from Tulum (Engineer Group), in the Cambridge Museum; three-sevenths natural size.
- E. Handle of a paddle in the Cambridge Museum; three-sevenths natural size.

frigate-bird, but the crest is a gratuitous addition; in a few instances it seems as if the artist had a hornbill in his mind.

The body and wings of the bird are frequently omitted, then the neck disappears; in some examples only the eye and hooked beak persist (Fig. 42, a, b); and in one or two examples known to me the eye alone remains of the vanished bird.

The eye of the crocodile may develop into a grooved sigmoid curve, or degenerate into a simple loop. One or both jaws may terminate in a loop; the teeth are more often absent than present; in one spatula they occur on the tongue only (Fig. 42, c). The tongue usually reaches the bird, but it may be quite short; though generally straight, it may be curved and may terminate in a small bird's head; indeed, either jaw may occasionally have a similar termination. For a selection of characteristic modifications of this motive I would refer the reader to Plate XII. of my *Memoir*, from which I have borrowed the examples seen in Fig. 42. Of these A is a conventional but readily recognisable representation of both the bird and the crocodile; a, c, b are varieties which present no difficulty of interpretation, and e is a slightly curved handle of a paddle in which the design is very greatly simplified.

The decorative art of the outlying Trobriands (Kiriwina) and Woodlark (Murus) Groups appears to differ in many respects from that which is characteristic of the other groups of this district; this is especially noticeable in the lime-boards, and on the oval-painted shields.

The north-east coast of British New Guinea is now being opened up by the Administrator, Sir William MacGregor, but as yet no specimens of its decorative art have found their way to British museums.

VI.—RELATION OF THE DECORATIVE ART TO THE ETHNOLOGY OF BRITISH NEW GUINEA.

A GENERAL survey of the decorative art of British New Guinea clearly reveals the fact that there are distinct aesthetic schools, if the term may be permitted, in each of which there is a characteristic set of motives and also of forms and technique. The boundaries of these districts are not sharply defined, but, although our knowledge is still imperfect, they can in most cases be traced with sufficient exactitude. I expect that the Papuan Gulf district will be found to extend from the Fly River to Cape Possession (long. 146° 25' E.), and that the Fly River district proper must be confined to what I have termed its Middle Region, and perhaps the upper reaches of that river as well.

We may then take these five districts for granted. The question now presents itself: What is the meaning of their distinctness? I do not think we have at present sufficient evidence to enable us to do more than make suggestions as to possible causes, and naturally ethnology is first appealed to. Are these differences due to ethnic diversity?

Many of those who have written on the natives of British New Guinea have not sufficiently distinguished between the numerous tribes in our Possession, and they speak in vague terms of the Papuans as if they were all alike. Now this is by no means the case, and before we can gain an adequate comprehension of Papuan ethnography and ethnology we must clearly distinguish between the characteristics of the various tribes, their customs, languages, and handicrafts.

There is still much discussion concerning the limitation

of the term Papuan as applied to people, and even whether it should not be dropped altogether, as Professor Sergi suggests. The Italian anthropologist extends the term Melanesian not only to comprise the natives of all the Western Oceanic islands, including New Guinea and the adjacent islands, but also Australia. At present I adhere to what Mr. Ray and myself¹ have considered to be the most convenient course, and to employ the term Papuan for what appear to be the autochthones of New Guinea. By Melanesians we understand the present inhabitants of the great chain of islands off the east of New Guinea, and extending down to New Caledonia. These terms are used to designate peoples, not races; neither are pure races, and at present we are unable to gauge the amount of race mixture in either, or even to state precisely what are their components.

From the boundary of Netherlands New Guinea to Cape Possession on the eastern coast of the Papuan Gulf, and inland from these coasts, the natives are dark, frizzly-haired Papuans; typically they are a dolichocephalic people, and rather short in stature.

The Papuans also occupy the greater part of the south-east peninsula of New Guinea; but along the southern coast-line, almost uninterruptedly from Cape Possession to the farthest island of the Louisiades, is an immigrant Melanesian population, about whom I shall have more to say presently.

I will now enumerate a few facts which will clearly bring out the essential distinction between these two peoples.

We have not at present a sufficient amount of data on the physical characters of the two peoples by skilled observers to enable us to formulate what differences there may be between them. There is no doubt that the Papuans are more uniformly dark than are the Melanesians (I am now

¹ S. H. Ray and A. C. Haddon, "A Study of the Languages of Torres Straits," *Proc. Roy. Irish Acad.*, 1893, p. 309.

referring solely to the Melanesians in British New Guinea), and their hair is as constantly frizzly. Among the Melanesians light-coloured people are constantly met with, as are also individuals with curly and occasionally straight hair. Their skulls exhibit many variations, and are occasionally brachycephalic. Judging from my experience of the Western Papuans, the Papuan men usually sit with their legs crossed under them like a tailor, whereas the Melanesians squat, like a Malay, usually with their haunches just off the ground. I do not know whether this rule holds good for the Papuans of the south-east peninsula.

The Western Papuans may or may not scarify their skin, as in Torres Straits, but they do not tattoo; the Melanesians tattoo themselves, especially the women. Tattooing has, however, spread to a certain extent among the Papuan hill tribes of the peninsula; the Koitapu women appear to have thoroughly followed the fashion of their Motu neighbours; amongst the Koiari and other hill tribes it occurs only occasionally. The V-shaped chest mark *gado* (Fig. 20) occurs among the Motu and Loyalupu, but not east of Keppel Bay. Among the two former the tattooing lacks symmetry, but in Aroma curved lines become more frequent and asymmetrical figures have a bilateral symmetry with regard to the body.

The houses of the Gulf and Western Papuans are often of great size and contain numerous families, and there appears to be more club-life among the men. The houses of the Melanesians are smaller, each family possessing one; those in the Trobriand Group are not built on piles. Very characteristic of the Papuans are the houses which are confined to the use of the men. These houses are the focus of the social life of the men, and as religion among savages is largely social usage, it is also in connection with these structures that most of their religious observances are held.

The initiation of lads into manhood is accompanied with sacred ceremonies in some of the Papuan tribes, but, so far

as is known, by none of the Melanesians in New Guinea. Masks are usually, perhaps invariably, worn at these ceremonies, and the bull-roarer is swung and shown to the lads. There is no record of a bull-roarer among the Melanesian folk.

Masks are employed by many peoples during certain ceremonies; their distribution in New Guinea is interesting, as it will be found that in the British Possession they characterise the Papuan as opposed to the Melanesian elements. They were common in Torres Straits, have been obtained in Daudai, and are very abundant in the Papuan Gulf from Melancholic Point to Cape Possession.

Dancing may be a secular amusement or a ceremonial exercise; in both aspects it is largely practised by the Papuans proper. We have very few accounts of dances among the Melanesians, and these do not appear to be of a specially interesting character.

Of their weapons the stone-club is alone common to all the tribes. The use of the bow and arrow is confined to the Papuans, and is universally employed to the west and in the Papuan Gulf. Heavy, sword-like, wooden clubs and wooden spears are common among the Melanesians, and the sling is employed in the D'Entrecasteaux Islands.

Only the Melanesians make pottery.

The Papuans earlier adopted tobacco, and grew their own tobacco before the white man came, but they do not chew the betel to any great extent; quite the reverse is the case with the Melanesians.

I have now enumerated a sufficient body of evidence to demonstrate that two groups of people inhabit British New Guinea. We have now to see whether a further analysis is possible.

Our knowledge of the Western Papuans is too imperfect for any definite generalisations to be made at present, but I venture to present the following tentative suggestions:—

The most typical Papuans in the British Protectorate are

probably the bush tribes from the Dutch boundary to the back of the Gulf of Papua. They are gradually being pushed inwards by the coast people. Macfarlane contrasts the high and broad skull of the latter with the "long, narrow skull, with its low forehead and prominent zygomatic bones," of the former, whom he also states are "greatly inferior, both mentally and physically." The observations of d'Albertis of a racial mixture in this region are supported by de Quatrefages and Hamy. The Torres Straits Islanders are also a mixed people. I do not think we have sufficient evidence before us to decide what are the component races of these Western Papuans. I suspect that the Fly River is to a slight extent what may be termed a "culture route," and that the natives of the higher reaches have indirect communication with those of the north coast of New Guinea; for example, the rattan armour collected by d'Albertis high up the river is similar to that obtained by Finsch from Angriffa Havn, near Humboldt Bay, and recalls the cor armour of Micronesia; it is probable that this was the route by which tobacco found its way to Torres Straits and the Gulf district, and thence to the south-east.

The Papuans also extend down the south-east peninsula and into the adjacent island groups. On the mainland they have been conquered in certain places by Melanesian immigrants, and a mixture of these two peoples has taken place to a variable extent. In the islands the amalgamation has been more complete.

The immigrant people are by the majority of writers spoken of as Polynesians. This identification is apparently based solely on the lighter colour of some of the former than that of the Papuans proper, and on numerous words common to them and the Polynesians.

The light colour of the skin and the occasional presence of curly or even straight hair among some of the people of British New Guinea certainly proves a racial mixture, although Comrie and Finsch do not lay much stress on these

points. The latter (*Samoafahrten*, p. 234) writes:—"The natives of Bentley Bay, as at East Cape, are of a tolerably light skin colour and belong to what the ignorant would explain as a Malay mixture. But wrongly, for they are true Papuans, amongst whom the individual occurrence of curly, even of smooth hair, is of no consequence." The craniology of the natives of the south-eastern peninsula and neighbouring islands has been studied by Comrie, Flower, Mikloucho-Maclay, de Quatrefages, Hamy, and Sergl, most of whom admit with Flower "a considerable mixture of races among the inhabitants of this region of the world." As at present anthropography cannot speak with precision concerning the racial elements in this immigrant people, we must turn to other branches of anthropology, and we will see what light ethnography and linguistics can throw on this ethnological problem.

A comparison of Papuan and Melanesian customs and handicrafts will prove that there is little of real importance in common, say, between the Motu or the South Cape natives and the Samoans. I need only allude to the almost total absence of a system of cosmogony or of a pantheon with a definite mythology; associated with this lack of a theology is the absence of an organised priesthood. The democratic Papuans and Melanesians have no hereditary chieftainship, and the power of tabu is much more limited than in Polynesia. Strangely enough, these so-called "Polynesians" in South-East New Guinea make pottery and do not drink kava. There is also a well-marked distinction between the weapons, implements, etc., and the decorative art of the New Guinea people and those of the Polynesians.

For the linguistic evidence I have consulted my friend and colleague, Mr. S. H. Ray, who is our great authority on the languages of Western Oceania. In an essay in my *Memoir*¹ he discusses this question, and as most is known about the Motu language of the neighbourhood of Port

¹ *The Decorative Art of British New Guinea*, p. 263.

Moresby, he takes this as a basis for comparison; what is proved for this applies, in all probability, to the other Melanesian languages of British New Guinea. "Much could be written to show that it is with the Melanesian tongues that the Motu of New Guinea should be included and not with the Polynesian. The same method applied to the Kerepunu, the Arona, Suau, and other dialects akin to the Motu, points to the same relationship. The Motu grammar is entirely Melanesian and non-Polynesian. Such words as are common to it and the Eastern Polynesian are equally common to the whole of Melanesia. Melanesian words which are non-Polynesian are also found in Motu and the allied languages of New Guinea."

I had long been puzzled by certain differences between the Motu and allied tribes on the coast of British New Guinea and the natives round Milne Gulf and of the neighbouring groups of islands, all of whom I speak of collectively as the Massim.

There is a difference in their physiognomy. The Motu and allied tribes are remarkably destitute of a religion, and are (or were) at the mercy of the sorcerers of the indigenous hill tribes, and, what is more remarkable, there is no trace of the cult of the sacred frigate-bird or of that of any other animal. They make their pottery by beating a lump of clay into a pot, whereas, according to the only descriptions we have, the Massim women build up their pots with bands of clay laid in spirals. A study of my *Memoir* on the decorative art of British New Guinea will clearly bring out the enormous difference between the Motu and the Massim in artistic feeling and execution.

My knowledge of Melanesia was too slight to enable me to proceed further with this problem, but in a recently published paper Mr. Ray says¹:—"With regard to the place of origin of the Melanesian population of New

¹ S. H. Ray, "The Languages of British New Guinea," *Jour. Anth. Inst.*, xxiv., 1894, p. 52.

Guinea it does not seem possible to ascertain the exact quarter from which it has come. There is at first sight much dissimilarity between the languages west and east, between the Motu and Kerepunu on the one side and the Saau of South Cape on the other. Though this dissimilarity disappears on closer examination, it may be stated that the language of Saau appears very similar to those of San Cristoval in the Solomon Islands, which lies almost due east of South Cape. The Motu and Kerepunu agree more with the languages of the Efate district in the Central New Hebrides."

Further evidence must be collected before Mr. Ray's suggestion can be definitely accepted. The decorative employment of the frigate-bird in the Massims and Solomon Islands supports his first proposition; but, on the other hand, inlaying with shell and nacre is very characteristic of the Solomon Islands, and this is absent from the Massims; there are besides many other points of difference. So far as I am acquainted with photographs of natives from the New Hebrides I do not see any resemblance between them and the Motu, but it must be borne in mind that there can be culture-drift without appreciable actual mixture, though amongst savage peoples the latter must to a certain extent be concurrent.

To return to the Papuan peoples of British New Guinea. It is probable that these are also a mixed people, and not a race in the ethnological sense of the term. Owing to continual intertribal warfare, or at least mutual distrust, there has not been much intercourse between the inhabitants of different districts; this may partly account for such distinct styles of art as occur in Daudai and the Pagan Gulf. I have already hinted that influences from North-Western New Guinea may have penetrated down the Fly River, but a discussion of the latter question opens up complicated problems of Malaysian ethnography into which I cannot now enter.

VII.—NOTE ON THE SCROLL DESIGNS OF BRITISH NEW GUINEA.

THE occurrence of scrolls and spirals in South-East New Guinea, and their general resemblance to certain Maori patterns, have led several observers to believe that there may have been intercourse between New Guinea and New Zealand. As this problem raises some interesting questions I have thought it desirable to discuss it, but to do so adequately would take far more room than can here be spared.

Mr. Goodyear makes out a good case for the view that some, at least, of the spiral scroll motives in Malaysia are due to Mohammedan influence; but he probably goes too far in ascribing all the scrolls of the decorative art of the Malay Archipelago to that source. "The ornamental system of India was in the first instance, as known to us, Buddhist, under Greek influences; second, Arab-Mohammedan. The spiral scroll ornament of modern India is a mixture and survival of the two. (The more formal classic style of old Buddhist ornament has disappeared in India.) This is the ornamental system of the Malay Archipelago. . . . The present ornamental system of Malaysia is mainly the Mohammedan-Arab, which is derived from Byzantine Greek. The Malay alphabet, the Malay ornament, the Malay religion, and the Malay culture are all derived from India. . . . The spiral scroll is absolutely foreign to the ornamental systems of Polynesia.

"There only remains the case of New Guinea and New Zealand. Not only does New Guinea border directly on the Malay Islands, but it is geographically part of Malaysia. [Mr. Goodyear is wrong in this statement, as in its geology,¹ fauna, and flora New Guinea is essentially Australian.] The princes of the Island of Tidore have actually been the potentates of the Northern Coast of New Guinea. The New Guinea ornamental system shows degraded and barbaric forms of the Mohammedan spiral scrolls of Malaysia. From these once more are derived the spiral scroll ornaments of New Zealand."²

The problem is by no means so simple as the reader might infer from Mr. Goodyear's remarks. It does not appear that he sufficiently allows for ethnic influence in decorative art. My contention is that we must first try to obtain a definite conception of the racial elements in a given people before we can expect to thoroughly comprehend their art. According to my experience, the more backward the people, the less they borrow artistic motives. Why should they? Their ornament has to them a significance and associations which foreign decoration lacks; the latter appeals to them no more than does Mexican or Mangaian ornament to us. From their mental attitude they are far less likely to copy foreign designs than are we. I have already (p. 65) adduced an interesting example of this when I compared the art of the Motu folk with that of the Gulf Papuans.

Malaysia is peopled by various races, of which the Malay stock is undoubtedly predominant, but the latter is regarded as having been, comparatively speaking, a late wave of migration, and probably the advent of the Malay was the disturbing cause which initiated the wanderings of the Polynesians (or Sawaiari, as Mr. A. H. Keane terms them).

¹ Haddon, Sillies, and Cole. "On the Geology of Torres Straits," *Trans. Royal Irish Acad.*, vol. xxx., 1894, p. 319.

² *Archæological Record*, &c., 1893, p. 412.

Even in Oceania the problem is complicated by the now generally received fact of an earlier population of many of the islands by Melanesians. Personally, I believe we can find distinct traces of their artistic skill in the decorative art which we are accustomed to put down as "Polynesian"; indeed, I suspect that most of the Oceanic wood-carving is due to Melanesian influence, although it now illustrates Saramori mythology.

I have not yet studied the decorative art of the Malay Archipelago; but as my friend, Professor Hickson, has, I will quote what he has said on the subject:—"From collections in museums it might be supposed that the Malays are very artistic; this is perhaps due to the fact that collectors frequently will only obtain implements and the like that are ornamented with curious coloured designs and figures, and leave behind all the spears, shields, and the like that are not so ornamented; the result being that an unfair proportion of ornamented things appear in the cabinets of the museum. I am inclined to believe that the Malays are not artistic, and that the few ornamented designs of their own are very poor and primitive."¹ After alluding to the ruined temples in Sumatra and Java, and the complicated patterns on the people's costumes, he continues, "but this is not Malay art. It is the art that was brought by Buddhist priests in the third century, according to Fa-hien, the Chinese pilgrim from Further India.

"Nor should we judge of Malay art from the specimens obtained in Timor, Atu, Timor Laut, and Ceram, for in these islands there is undoubtedly a very great influence from the mixture of the race with the Papuans. In Celebes, South Borneo, and the Moluccas, there is very little art; and this is due, I believe, to the fact that there has been very little Buddhist influence and very little Papuan influence.

"The chief character of Malay art, if it can be so called,

¹ *The Atlantic*, 30th May 1891, No. 995, p. 519; also *Journal of the Cambridge Anti-Soc.*, vii., p. 295.

is the absence of any good curves. Nearly all their designs are angular, and those that they have copied from other races have a tendency to become angular.* The implements, weapons, cloths, etc., "of the people are frequently, if not usually, unornamented, in striking contrast to similar things among the Papuans. Nothing could be more impressive than the contrast in this respect between a Malay and a Papuan village."

There can be no doubt that the decorative art of North-West New Guinea has been affected by influences from Malaysia; but it is very doubtful whether this has penetrated very far inland, or even very far down the coast.

It must be remembered that the Papuans, and Melanesians generally, are a fierce people, and there is, as a rule, very little intercourse indeed between various tribes, in fact there is an almost continual condition of inter-tribal war. In a country containing great mountain ranges, dense jungles, or extensive swamps, with no roads, and innumerable tribes speaking different languages, and at enmity with one another, it is difficult to see how artistic motives could readily travel. There are only two possible routes, rivers and the coast-line.

I have elsewhere¹ stated that the Fly River "has been to a certain extent what may be termed a 'culture route,' and that the natives of the higher reaches have indirect communication with those of the north coast of New Guinea."

If any one will take the trouble to study the evidence I have collected, it will, I think, be incontestable that the scroll designs of the extreme south-east point of New Guinea and of the adjacent islands could not have come overland. With the possible exception of the central region of the Fly River, about which we at present know very little, I can see no traces of "Malayan" culture in the decorative art of British New Guinea.

¹ *The Decorative Art of British New Guinea*, 1894, p. 256.

The evidence at our disposal certainly points to the conclusion that the bulk, at all events, of the natives of the Louisiades, D'Entrecasteaux, and neighbouring islands and mainland are sea-borne immigrants. And if their scroll designs have not been developed in the district where they now reside, we must seek for their origin in the ancestral home of these travellers. I have discussed this question in my *Memoir* (pp. 258-269), and have stated it in a more concise form in *Science Progress*, vol. ii. (1894), pp. 91-95, and have come to the conclusion, which is shared by Mr. S. H. Ray, on linguistic grounds, that no Malay influence can be shown, but that the people came from the great chain of Melanesian islands which stretches from the Admiralty Islands to New Caledonia, and possibly from the Solomon group. Nowhere in the Melanesian Archipelago do we find scroll designs comparable with those of the district of New Guinea now under consideration. The conclusion, then, seems inevitable, that until further evidence is adduced we must regard these scroll designs as having originated in this district, and in the manner I have demonstrated—i.e., from birds' heads.

To pass on to New Zealand. Although we have innumerable specimens of the beautiful and very characteristic wood-carving of New Zealand in our museums and in private collections, yet no one has seriously studied the art, or has offered a satisfactory explanation of it.

It is generally admitted that there was a Melanesian population on the group before the Maoris arrived some six hundred years ago. The latter probably came from some of the islands between Samoa and Tahiti, probably mainly from Rarotonga.

The scroll designs have no resemblance to the patterns from the Rarotongan region of Oceania. The only examples of this particular technique occur in one or two weapons from Fiji; these are of typical Fijian shapes, but the carving is in the New Zealand manner. One of these is in

Baron von Hügel's collection in Cambridge, and another is in the British Museum. I have no explanation to offer for these facts that is satisfactory to myself. Apart from one or two isolated Fijian specimens, the wood-carving of New Zealand is unique.



FIG. 43.—Rubbing of the decoration of a Maori flake, in the Natural History Museum, Belfast; one-half natural size.

Some of the New Zealand patterns (Fig. 43, and Plate VI, Fig. 12) certainly have a superficial resemblance to the more typical scroll patterns from the South Eastern Archipelago of New Guinea, but there is no ground for comparing them except for this casual resemblance. The bird element is entirely lacking, and there is far less interlocking in the Maori than in the Papuan scrolls; there are also noticeable technical differences. My impression is that the carved designs have been derived

mainly from tattooing, and possibly also partly from the dismemberment which so often befalls the conventionalised carvings of their ancestral figures. (Plate V₄, Fig. 11.) When one looks at tattooed Maori heads or carvings of human figures one finds that rounded surfaces, such as the wings of the nose, the cheeks, the shoulders and thighs are usually decorated with spiral designs; this is in such places an appropriate device, as it accentuates the features which are ornamented, and personally I am inclined to believe that artistic fitness is the explanation of this employment of

the spiral, and that it has been transferred to other objects as being a pleasing design, and that connecting lines have been made to give coherence to the decoration. It is worth noting that in early European art the shoulders and haunches of animals are often decorated with spirals.[†]

[†] See, for example, Plate VII., Figs. 2, 3.



THE MATERIAL OF WHICH PATTERNS ARE MADE

HAVING sketched the main features of the decorative art of a definite locality, I now pass on to a different field, and will select examples from every age and clime, in order to illustrate the life-histories of a number of designs. In this I have a twofold object. First, I wish to indicate in this section the material out of which designs and patterns are formed—the objective originals which become gradually transformed into æsthetic conceptions; and, secondly, I also wish to illustrate the fact that this process of transformation is confined to no one people.

We shall see that the originals of decorative art are mainly either natural or artificial objects, and the latter will first claim our attention.

I—THE DECORATIVE TRANSFORMATION AND TRANS- FERENCE OF ARTIFICIAL OBJECTS.

DR. H. COLLEY MARCH has introduced the term "Skennomorphs"¹ for the forms of ornament demonstrably due to structure. Professor G. Semper² was the first to show that the basket-maker, the weaver, and the potter originated those combinations of line and colour which the ornamentist turned to his own use when he had to decorate walls, cornices, and ceilings." So write MM. Perrot and Chipiez,³ but this statement is too sweeping. A considerable amount of ornamentation is doubtless due to technique, but in Europe, Western Asia, and North Africa plant forms have had a great influence in the origin of designs, some of which have been modified by passing through a textile technique.

Given any object, two forces, so to speak, attack it—the utilitarian and the æsthetic. The resultant may be an implement which is solely useful and has little or no beauty to recommend it; or while retaining a full measure of utility, it may be beautified in form or in surface decoration; or, lastly, the object may become so glorified by the artist as to be translated from earthly use into the realm of æsthetics.

¹ From *réseaux*, labyrinths, utensils, tools, baggage, tackle, dresses.

² G. Semper, *Der Stil in den technischen und industriellen Künsten oder praktische Ästhetik*. Munich, 1860-63, 2 vols. (Second Edition, 1878-79.)

³ G. Perrot and C. Chipiez, *A History of Art in Ancient Egypt*, II, p. 346, 1883.

1. *Transformation of a Solitary Object.*

There are numerous examples of the annihilation of the useful by the beautiful. One instance came under my notice at the Murray Islands, in Torres Straits. Formerly when a girl was engaged to be married, in addition to numerous petticoats she wore a number of ornaments suspended from her neck and hanging down her back. The more important of these were white triangular pieces of shell, *s*, cut out of *Conus millepunctatus*; turtle-shell ("tortoise-shell") bodkins (*ter*), used for shredding the leaves of which their petticoats were made, and for piercing the septum of the nose of infants; turtle-shell fish-hooks, and curious turtle-shell ornaments which are called *sabagwar*. These latter vary considerably in size, form, and amount of decoration; but by placing a number of them together a sequence can be obtained which illustrates the evolution of the *sabagwar* from the fish-hook (Fig. 44). Some hook-like objects are slightly ornamented with incised lines, and they might very well serve as fish-hooks; others are clearly totally unfitted for practical use, and may be quite plain or decorated. Fish-hooks (Fig. 44, *A*) are used in pairs, being fastened at each end of a piece of fine string, which, in its turn, is tied at its middle to the fishing-line proper. When the piece of twine with its hooks was thrown round a girl's neck, the two hooks would often hang down her back shank to shank. Two *sabagwar* similarly arranged occur in the British Museum collections. What more natural than that this should be noticed, and to save the trouble of making two *sabagwar* a double one should be cut out of one piece of turtle-shell. The more remotely from the fish-hook did the *sabagwar* vary, the larger it became, and in some instances the double form became of considerable size, and the hook portion acquired a slight spiral curvature (Fig. 44, *K*). In one modified specimen the hooks are actually fused with the shank (Fig. 44, *L*). It will



FIG. 44.—Turtle-shell ornaments worn in Torres Straits. The ratio of size of the illustrations to the originals is as 4:15. A. Ordinary fish-hook, made of turtle-shell. B-L. Series of ornaments, probably derived from fish-hooks, made of turtle shell. All in the British Museum, from a photograph by Mr. H. Oldland, of the British Museum.

be also seen that divergent Λ -like processes often occur on the *sabagoror*, but are never found on the fish-hook.

The betrothal equipment of a girl thus consisted in the main of objects of utility which had reference to her future condition. The turtle-shell objects being easily cut, afforded a convenient field for ornamentation, and most of the *ter* implements exhibit a little decoration. The comparatively slender fish-hooks provided insufficient surface for orna-



FIG. 45.—Sketches of two axes from the South-east Peninsula of New Guinea in the possession of the author; about one-tenth natural size.

mentation; the broadening of them for decorative purposes reduced their efficiency, so that in time the latter was sacrificed and a mere ornament resulted.

In the chain of islands which stretch away from the south-eastern end of New Guinea, one finds an interesting metamorphosis of the stone axe. The stone axe was very precious among these people, to whom the art of working in metals is still unknown. A large fine axe would have very considerable value, and the exhibition of it would be a

symbol of wealth, and consequently of power. The desire to be recognised as wealthy has resulted in the development of a stone axe of which the stone is very large, often remarkably thin and beautifully polished, and is hafted to an unwieldy handle which may be carved and decorated with shell-money and other ornaments. The value of such an object seems to depend upon the amount of work required to produce it; its inutilty enhances the reputation of the wealth of its possessor; thus we appear to arrive at certain primitive conceptions. Work done gives ownership or property. One form of wealth is the possession of unnecessary or useless property; the exhibition of this gives power to the owner.

I have made sketches (Fig. 45) of two axes in my possession. The first (A) is decorated with characteristic ornamentation, consisting in the upper part of birds' heads and at the handle of the bird and crocodile design; but it is still a useful implement. The second axe (B) has a large thin stone, and is an unwieldy and probably quite useless object.

The late Mr. H. H. Rowilly¹ tells us that at Utian (Brooker Island), in the Louisiades, "The stone implements made here are very fine. I got some axes of enormous size, which I am sure could not be intended for use. They seemed rather to be a common possession; perhaps two or three belonged to the village, and were exhibited on state occasions." The Rev. Dr. W. Wyatt Gill,² at South Cape, saw "two axes solemnly carried by the chiefs as a preliminary to peace . . . a glance at the slight artistic hafting will convince any one that they are not intended for cleaving timber." This is all the information we have concerning these axes. It appears that they have come to be recognised as symbols of authority, but it is extremely doubtful whether they are anywhere held as a common possession.

¹ *The Western Pacific and New Guinea*, 1896, p. 138.

² Chalmers and Gill, *Work and Adventure in New Guinea*, 1885.

A still more wonderful change has affected certain adzes in the Hervey Islands. (Fig. 46.) The stone blade is a



FIG. 46.—Manganian symbolic adze in the Copenhagen Museum; from Dr G. Mørk.

carefully cut and polished piece of basalt, and it has every appearance of being perfectly serviceable; but the elaborately carved handles preclude the idea that in their present state they could be used for practical purposes. In form the handles may be quadrangular, gradually diminishing from the base to the blade, or conical, or polygonal or cylindrical. When short the handles are thick, even to the extent that they can scarcely be grasped by the two hands; these forms too are often perforated by quadrangular holes. One specimen in the Archaeological and Ethnological Museum at Cambridge is six feet three inches in length.

Later on (p. 83) I shall describe the ornamentation on these adzes; at present we are merely concerned with the fact that for some reason or another they have become functionless through increase in the size of the handle, and—by reason of the weakness caused by deep carving. We have now to trace the meaning of this vagary.

Dr. W. Wyatt Gill, who resided for twenty-two years in the Hervey Islands, and who has been a very careful observer and recorder of Polynesian customs and beliefs, informs us that "The adzes of the Hervey Islanders are frequently hafted with carved 'pua' wood. The carving,

which is often admirable, was formerly executed with sharks' teeth, and was primarily intended for the adorning of their gods. The five-pointed pattern is known as 'the sharks' teeth pattern' ('nia mango'). Other figures are each supposed, by a stretch of the imagination, to represent a man squatting down ('ikilikiki tūmān'). Some patterns are of recent introduction, and being mere imitations of European designs, are destitute of the significations which invariably are attached to ancient Polynesian carving. The large square holes are known as 'celborings' ('u tūā'); the lateral openings are naturally enough called 'chests' ('kavān'). To carve was the employment of sacred men.¹ Dr. Hjalmar Stolpe, of Stockholm, who has made a special study² of the ornamental art of these people, found in the museum in Chambéry an adze of this kind; according to the account on the label the stone had belonged to a chief, and it was after the owner's death shafted in this manner that it might be preserved by his family as a remembrance. Dr. Stolpe continues, "The internal probability of the story confirms the truth of the account. Ancestor worship is a characteristic feature of Polynesian religion. The souls of the departed become the guardian spirits of the survivors. Their worship demanded a visible form, under which offerings could be enjoyed by them, and this was found sometimes in the skull itself of the deceased, which was preserved in the house, sometimes in some article of his property. In the latter case scarcely anything could be more suitable than the stone adze, which was the deceased's most important implement, and which it required so much toil to make. On the Hervey Islands the transition was easier, as there the stone adze itself is considered as a god. Even the fine

¹ H. Stolpe, "Utvæddlingsföretäcker i Natursällens Ornamenterik" (1890), translated by Mrs. H. C. Mads, "Evolution in the Ornamental Art of Savage Peoples," *Trans. Ethnologic Soc. and Sci. Soc.*, 1891.

plait of coco-nut fibre with which the adze is fastened to the shaft was a god, and the method of binding it had, in Mangaia, been taught by the gods. Both during the operation of plaiting and during the decoration of the adze-shaft songs were sung in a low voice to the gods, that they might further the work. The 'puu' wood (*Fyragia Berteriana*) of which the carved adze-shafts are made may also have a religious significance, for Gill speaks of 'its long branches being regarded as the road by which the spirits of the dead descended to Hades.' "

The following conclusions of Dr. Stolpe's appear to be warranted:—"From these researches it appears to me to follow that the peculiarly shafted stone adzes of the Hervey Islands have a religious signification, that they are especially connected with ancestor worship, and that they were probably the very symbols under which this worship was performed."

Dr. H. Colley March¹ has gone a step further, and tries to account for the very remarkable form of the handle of the sacred adze. He says, "It is remarkable that the typical Mangaian axe [adze] was exclusively associated with 'Tane, the royal-visaged.' This god was widely venerated over the Pacific; in Mangaia he was especially the drum-god and the axe-god; he presided over the erotic dance as well as over the war dance . . . it is evident that the drum was not only associated with a Tane cult in the erotic dance, but was regarded as Tane's embodiment; when the drum was beaten, it was Tane that was struck, and from the fissure in the drum it was Tane's voice that issued." Dr. March quotes a number of extracts from early voyagers, etc., descriptive of various Polynesian drums, and he comes to the conclusion that the upright drums, which were hollowed out of a single piece of wood, were originally derived from bamboo instruments. He figures a drum

¹ "Polynesian Ornaments a Mythography; or a Symbolism of Origin and Descent," *Journ. Anth. Inst.*, xiii., 1893, p. 307.

(Fig. 47) said to have come from Java, which, with the exception of the terminal head, corresponds closely with the drum called *ngga* which Captain Cook describes at Tonga. He concludes that after the drum "had passed from bamboo to wood, the horizontal instrument assumed the erect form, more appropriate to the god, and was then surmounted, as in the so-called Javan example, by Tane's head, which subsequently gave place to Tane's adze. As the cult differentiated, the symbolism differentiated too." Without going into further detail, in the short thick form of the Mangaiti adze, such as Fig. 46, the upper portion of the handle is usually cylindrical. The lower portion is usually quadrangular, or may be polygonal, and looks as if it might be a pedestal for the former. According to Dr. March's interpretation, the stone implement represents the head of Tane; the upper cylindrical part of the handle is his neck. The lower part of the handle is an artistic analogue of the sacred drum; "the useless transverse closings represent the original bamboo joints, as well as the solid ends of the wooden drum. In spite of the fact that their presence increased the difficulty of hollowing out the shaft, they were reproduced in obedience to a well-recognised law. The square and oblong rectangular openings have an analogous explanation. They indicate the original apertures, whether the slit in the bamboo, or the single or double chink in the wooden drum which was excavated through the



FIG. 47.—An erect drum (*Ngga*), surmounted by the head of a god from Java, in the Copacabana Museum; from Dr. C. March.

drum in order to secure its resonance. The great increase in the number of apertures, helped by rectangular designs on horizontal instruments, took place as an evolution of ornament that largely consists in a multiplication of functionless details."

It is possible that the adzes from the Hervey Islands, with long, unperforated carved handles, may have a different history from the form illustrated in Fig. 46; they may merely be decorated but useless adze handles. In any case, the above-quoted conclusions of Dr. Stolpe may be accepted.

In the three examples of the metamorphosis of a practical object into an unpractical one just recorded, we have an illustration of the effects of three dominant human forces on these several implements, art, display or wealth, and religion. The result is practically the same in all cases, but the motive leading to it is different. Analogous modifications are everywhere to be met with.

2. *Transference of Fastenings.*

One of the earliest handicrafts was to fasten two things together. To quote from Dr. H. Colley March,¹ "As soon as man began to make things, to fasten a handle to a stone implement, to construct a wattled roof, to weave a mat, skeuomorphs became an inseparable part of his brain, and ultimately occasioned a mental craving or expectancy."

In order to securely fasten two objects together, such as splicing wood or fastening a handle to a stone implement, a lashing is necessary, and the nature of the latter varies more or less according to the conditions under which the artificers live. Where mammals are abundant, their sinews afford a readily procured and very strong, fine lashing, but it occurs only in short lengths. The hide of a newly-killed animal is

¹ H. Colley March, "The Meaning of Ornament, or its Archaeology and its Psychology," *Trevel, Lanc. and Cheshire Ant. Soc.*, 1889.

pliant, strong, and can be so cut as to produce long things. Owing to the rarity of mammals in New Guinea, and their absence from the Great Ocean, the Papuans, Melanesians, and Polynesians make no use of skins or thongs; sinews may be employed, but the great bulk of all fastening is accomplished by the employment of vegetable fibres. The inner bark of various trees supplies bast and tapa, several vegetables have long fibres which are utilised, but the most widespread and important of all lashings in Oceania is the twisted or plaited string made from the fibres of the husk coco-nut. The latter is known as sinnet, and there are many degrees of excellence in its manufacture; for rough work it is coarsely plaited, but nothing can exceed the delicacy and beauty of the finest sinnet work, such, for example, as occurs on the symbolic adzes of the Hervey Islands, where it was even regarded as a god.

Most of the stone implements of primitive man were fastened in various ways into handles, and an inspection of almost any ethnological collection will demonstrate the diverse methods of lashing employed by even the most backward peoples. For example, we have in Plate I., Fig. 1, an illustration of the fastening of the stone axe of Montezuma II., now in the Athlras Museum at Vienna;¹ but analogous figures will be found in numerous books of travel, or in ethnographical journals and treatises.

The even serving of the lashing gives rise to geometrical figures. One might in some cases describe them as patterns, whose symmetrical disposition gives a pleasing effect.

In process of time the stone spear points of our ancestors were replaced by bronze, and during the evolution of the palstave, or socketed bronze celt (Plate I., Figs. 4, 10, 11), from the flat bronze celt, the method of fastening also changed. But by this time the old style of binding had become so associated in men's mind with the implement, that it was engraved on the socket of the bronze head as a pattern.

¹ Copied from J. Evans, *Bronze Implements*, p. 148.

Hence most of the ornamentation of bronze implements. (Plate I., Figs. 2-4.) On socketed bronze coils one frequently finds (Plate I., Figs. 10, 11) two, three, or more ridges running from the base to some distance towards the end; three is the most common number of these ridges. They may fade away at their ends, or terminate in slight knobs or annular



FIG. 28.—Ridging of part of the decoration of a Tongan club in the Norwich Museum; one-third natural size.

prominences. The meaning of these characteristic markings is at present obscure, but they appear to be skeuomorphs of lashing.

What are known as "beads" have frequently the same origin; that is, they are reminiscences of fastenings. This is especially evident when the bead is decorated with a

twisted design, as occurs in the zonal decoration of a bronze vessel from a Swiss lake-dwelling. (Plate I, Fig. 5.) There is no reason to believe that lashing was actually employed on older forms of Assyrian combs, or prehistoric bone needles or bronze knives, nevertheless the patterns shown in Plate I, Figs. 6, 8, and 9, have doubtless been derived



FIG. 39.—Building of part of the decoration of a Tongan club in the Norwich Museum; one-half natural size.

from ligatures; more from the fact that such patterns were familiar, and a feeling for a need of decoration, than for any special appropriateness.

One frequently finds designs in the ornamentation of objects from Oceania which are evidently based upon sinnet lashing. To take a few out of many examples now before me, in Fig. 48 we have a reduced rubbing of a carved

cylindrical club, said to come from the Friendly Islands (Tonga); the same kind of club also occurs in Fiji. The decoration of this club irresistibly suggests bands of plaited sinnet irregularly bound round the club.

In these two groups of islands sinnet is often worked into a design that is also copied on the upper part of a carved wooden club. (Fig. 49.) The same kind of lashing is seen in Plate I, Fig. 1. Occasionally, instead of being angular, this pattern is carved in curved lines, and so gives

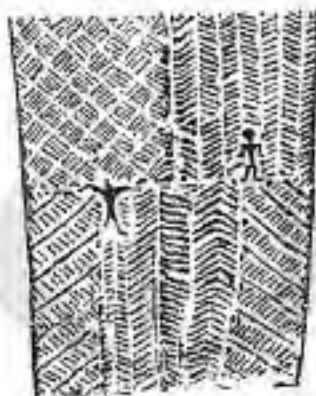


FIG. 53.—Ridging of part of the decoration of a Tongan club in the Norwich Museum; one-half natural size.

rise to an imbricate pattern, which might be mistaken for a scale pattern.

Other sinnet patterns perhaps occur in the lower part of the decoration of a Tongan club. (Fig. 50.) The design on the upper left-hand corner is evidently copied from matting, and it frequently occurs on these clubs. This figure also illustrates the Tongan peculiarity of inserting little figures into designs, in this case a man and probably a frigate bird.

I do not wish to suggest that all zigzags included within

parallel lines, as in Fig. 48, or such simple designs as those of Fig. 50, are everywhere almost derivatives, or otherwise skeuomorphic; some, at least, in the Pacific certainly are. We have seen that birds' head designs may degenerate into zigzags (Figs. 30, 36), and we shall see that frogs' legs (Fig. 122, u), snakes (Fig. 103, a, b, c), alligators (Fig. 97, s, r), and even the human form (Fig. 125, A) may pass into zigzags. There are many other possible origins of the zigzag, but in many cases it is probably only a purely decorative motive of no further significance. The simple zigzag can be traced in ancient Egyptian art as far back as 4000 B.C., and, according to Professor Flinders Petrie, it continued popular with a few modifications for about 2000 years, when spots were associated with it, but these were adopted from foreign art. About the eighteenth dynasty the use of the zigzag was discarded in favour of the wavy line and various scroll designs. In all cases it is necessary to study each pattern locally.

3. *Skeuomorphs of Textiles.*

In Europe a very early form of fabric was wattle-work, formed by the interlacing of flexible boughs and wands. The most ancient huts were doubtless made of wattle-work daubed over with clay. Only very exceptionally are traces of these structures found, as, for example at Ebersberg, where Dr. Keller¹ found, among the *débris* of a lake-village which had been destroyed by fire, fragments of the clay daubing, "smooth on one side, and marked on the other, with deep depressions of the basket-work." The pattern thus impressed on the clay is one of repeated straight lines crossed by a contrasted series of curved ones. (Plate II., Fig. 1.) Thus the fire which consumed the house bared its clayey coating, and in this way preserved for us a record of what it destroyed.

¹ F. Keller, *The Lake Dwellings of Switzerland and other parts of Europe*. Second edition, 1878, p. 565.

I do not know whether the wattle-work has been perpetuated on any object as a skeuomorph, but it is possible that the shape of similarly constructed huts has been continued, as Mr. Charles de Kay suggests,¹ into the round towers of Ireland. He says, "Seeing how the Irish kept heathen ideas in other things, we can perceive how the round wicker house of the Kelt, such as we see it carved on the column of Antoninus at Rome, developed into the wood and wicker outlook tower and beacon, and in skilful hands became the Irish round tower. Christian in usage, they are pagan in design."²

The predatory expeditions of the Scandinavians created a demand for watch-towers and places of temporary refuge; the pattern for these was supplied by the traditional erections of the Gauls, but their translation into "towers more durable, useful, simple yet stately, than anything Ireland had seen before or has seen since," was due to the skill and experience of "Byzantine craftsmen driven from the East by the bigotry of the image-breaking emperors."

Mr. de Kay also calls attention to the encircling stone bands, or "string-courses," as in the round tower at Ardmore, "which repeat, without any useful object in stone, the horizontal bands that strengthened the tall wicker house of the Gauls. Such apparently trivial points weigh heavily in favour of the indigenous character of the round tower of Ireland."

The interlacing of flexible bands, such as strips of bast, entire leaves as of grass, or shreds of large leaves, is known to almost every people, and is employed in making mats. When the elements employed are all of one size, and when the plaiting is straight, the intersections form regular equilateral rectangles or squares. (Plate II., Fig. 3, and compare the transferred design in Fig. 50.) If the material consists of two colours simple patterns are readily produced, but of necessity the patterns must consist of straight, slanting, or

¹ "Pagan Ireland," *The Century Magazine*, xxvii., 1889, p. 368.

zigzag lines; curves are an impossibility. The same holds good for nearly all forms of matting and basketry which is made of strips of one material, but the constructional surface marking may be rectangles of various shapes and sizes instead of simple squares. (Plate II., Fig. 4.) When one series of the components is twisted, as in Plate II., Fig. 5, there is a kind of flow effect in the intersections.

The making of baskets by laying down the material in a spiral gives rise to different effects, especially when coloured strips are interwoven for decorative purposes—as for example, in some African baskets and the baskets made by the natives of South Australia, in the neighbourhood of Adelaide. Dr. Keller found in the Lake of Rodehausen a kind of basketry formed by land, the fibres of the lime-tree, intertwisted among a series of willow rods, the strips “running concentrically in such a way that both together form a structure like that called ‘herring-bone.’”¹ (Plate II., Fig. 2.) It is possible that the pattern in the middle band of Fig. 49, and some of those in Fig. 50, may have been suggested by basketry or plaited fans.

An early type of basket is seen in the Roman *corbula* (Plate II., Fig. 6), in which the osier rods are placed rectangularly; another, in an ivory plaque from Beulak (Plate II., Fig. 7), in which there is a chevron arrangement. The latter is the more common skeuomorph on European prehistoric pottery, but the rectangular type often occurs, and it may be seen on a Danish food-vessel of the Stone Age. (Plate II., Fig. 8.)

The bottom of a basket, with a cruciform arrangement of the bands, due to the method of weaving, was discovered by Dr. Keller in the Ternamura marl-pits of Northern Italy (Plate II., Fig. 9); and a piece of pottery from the same deposit is ornamented with a corresponding skeuomorph (Plate II., Fig. 10).

Dr. Colley March has further developed this subject, and,

¹ F. Keller, *The Lake Dwellings*, etc., p. 365.

while I cannot commit myself to several of his conclusions, I do not hesitate to give an exposition of his ingenious views, as they are very suggestive, and even if they are not finally accepted, they will lead to a further examination of the problems:—

"The perpetual concentration of attention, the strain of hand and eye and brain upon the forms of wattle-work and basketry produced an important decorative result. The mind acquired an expectancy of a special mode of curved repetitions. This particular skeuomorph is composed of a band that winds in and out among a row of rods or discs." (Plate III., Fig. 3.)

The "discs" are naturally the cross sections of the vertical elements of the wattle-work—that is the "rods." "The device underwent a change in opposite directions. The discs grew, or they vanished. In the latter case the band left by itself is the meander, and may be called a curvilinear zigzag. In the former case the discs often became the seat of phyllo-morphic invasion, and were transformed into leaves or flowers.

"Examples may be seen on the margin of a bronze shield from Cyprus (Plate III., Fig. 2); on a vessel of terra-cotta from the third sepulchre of Mycenæ (Plate III., Fig. 8); and on an enamelled Roman vase found on Bartlow Hill (Plate III., Fig. 5); whilst a twin-form, which presents both contrast and repetition, occurs on another bronze shield from the Mediterranean (Plate III., Fig. 1) and is the basis of the Assyrian ornament and its Greek variant called the guilloché. (Plate III., Figs. 4 & 3.)

"A different skeuomorph is derived from a different method of basketry, in which a single fibre is turned round a row of osier-sticks, so as to produce a wave repetition (Plate III., Fig. 2), as may be seen on the pottery of the ancient Puchlos (Plate III., Fig. 6). When these discs disappear, the fibre by itself resembles the Vitruvian scroll, and may be called a curvilinear fret. (Plate III., Fig. 2.)

"Whenever the pattern has a stepped form, as on many of the Pueblo vases (Plate III., Fig. 7), it indicates that the methods of textile manufacture had already influenced the eye and mind of the race before the invention or introduction of pottery."

The scroll-patterns illustrated by Dr. March may at one time and place have had the origin supposed by Dr. March, but it does not appear to me to be probable that they would have arisen in this way both in South Europe and in Mexico. I have shown (p. 51, Fig. 27) how a simple galloche has arisen from interlocking birds' heads. The Vitruvian scroll design occurs among the Tengeri head-hunters of New Guinea, and it is most improbable that it owes its origin to basketry. It is probable that the Pueblo pottery with curvilinear patterns, such as Plate III., Fig. 6, is more recent than that with angular designs; but I shall return to this later on. In fact, I would feel inclined to state that Dr. March's view is possible for the origin of the patterns in question, once and in a restricted locality, but highly improbable for wide application.

There is a great tendency for spirals to degenerate into concentric circles; examples could be given from New Guinea, America, Europe, and elsewhere. In fact, one usually finds the two figures associated together, and the sequence is one of decadence, never the evolution of spirals from circles. The intermediate stage has been aptly termed a "bastard spiral" by Dr. Montelius, "that is to say, concentric circles to which the recurved junction-lines give, in a casual glance, the appearance of true spirals."¹

"The strangest skeuomorph of all," writes Dr. March, "was that common to the early inhabitants of Northern Europe. They were adepts in basketry, and in wattle-work for walls and ramparts. Moreover, the pliant bark of the birch was ever ready to the hand for a thousand purposes.

¹ O. Montelius, "Sur les Peignoirs des Égées et des Peignoirs en Bronze," *Congr. fœdér. Stockholm*, 1874, II, p. 501.

of life. The Norwegian still makes hinges for gates and loops for the oar out of the entwisted fibre. The old Norseman spoke of the rudder withy, for the earliest rudder was an oar; and leather thongs were also used to keep the oar against the thole-pin. The skeuomorph consists of a withy wound upon itself. (Plate VII, Fig. 11.) This device, wrongly called a rope-pattern, gained such an ascendancy over the northern mind that it was employed sometimes as a symbol (Plate VII, Fig. 12), like the reefing knot on Roman altars. (Plate VII, Fig. 13.) It was used also by the ancient Egyptians. (Plate IV, Fig. 1.)

"It is evident that the withy skeuomorph (Plate IV, Figs. 2, 3), the Scandinavian worm-knot, established itself as a necessity of the mind before those men who were dominated by it had discarded a covering of skins for one of cloth; for its type is antagonistic to the regular intersections and the stepped designs of textile fabrics, and no trace of these appears on their early pottery.

"When weaving was at last introduced, so as to be practised by these people, it was probably along with the introduction of metals. But for a while the use of metal only increased the number of twisted things. The words, wire, wicker, and withy are all from the root *WI*, *to Twist*, and the Teutonic *WIRA* means filigree, an ornament of twisted filaments of metal; and as the simplest manner of terminating a wire is to coil its end, the earliest filigree is preponderantly spiral. (Plate IV, Figs. 5, 6, 7.) Thus was the way prepared," concludes Dr. March, "for the advent of the serpent zoomorph, so much affected by Teutons and Scandinavians."

In early times wooden bands were interwoven to form flat surfaces, as, for example, in the floor of a lake-dwelling at Niederwyl, in Switzerland (Plate IV, Fig. 8), but few traces of the art of "fascining," as Dr. March points out, remain to us from antiquity, since wood-work rapidly perishes by decay, and is easily destroyed by fire. This art produces a bold

decorative effect which appears to have been perpetuated in various ways. Amongst others may be mentioned the interior decoration of an earthen vessel from Ueberlingen See (Plate IV., Fig. 9), a crescent of red sandstone from Ebersberg (Plate IV., Fig. 10), and an incised stone from Hadrian's Wall, in Northumberland. (Plate IV., Fig. 11.)

So far we have only considered the type of ornamentation which occurs on plaited or woven objects, and these are seen to be conditioned by that particular technique. We have now to see what occurs when a new material is substituted for the old.

There are many varieties of tapa in the Pacific, some of which are coarse and others of extreme fineness and softness. The process of making and decorating tapa has often been described; sometimes the tapa is ribbed, having been beaten with more or less finely corrugated wooden mallets, occasionally it is marked with squares which give it an appearance of having been stamped by a simply plaited mat, but many pieces are quite smooth. There is nothing in the texture or manufacture of tapa to prevent its being ornamented with intricate and involved patterns. As a general rule, all over the Pacific we find that tapa patterns are largely geometrical—that is, they are formed of straight and angled lines; bowed lines, which are grouped into leaf-like designs, are not infrequent, but doubly curved lines and scroll-like designs are extremely rare. The evidence clearly points to a time anterior to the employment of tapa, and when mats and other textiles were the only fabrics; the decoration of these was necessarily angular in style. When tapa became general the older designs were transferred to the new material, and quite irrespective of its capabilities. Only gradually has it been found that the smooth surface of tapa lends itself to a more elaborate decorative treatment. The essential conservatism of the savage precludes rapid emancipation from long-existent thralls, especially as the æsthetic mind has, so to speak, become set in angularities.

It is probable that the practice of beating tapa with wooden mallets led to the discovery of printing in colours. The transitions are slight between finding the natural graining of wood impressing itself on the soft tapa, of so cutting the mallets as to produce a regularly grooved surface, and of colouring the blocks, and lastly of making the great printing blocks on which the pattern stands up in relief, which were made in Fiji. Sometimes the lines in relief of printing blocks are made by fastening the mid ribs of palm leaves on to a stout piece of tapa.

In certain islands it has been discovered that fern fronds covered with pigment can be used for printing, and thus



FIG. 51.—Sketches of tapa belts from Kerepumu, British New Guinea; about three-quarters natural size.

what is known in this country as "nature-printing" has been independently arrived at.

What has happened in the Great Ocean apparently also took place in New Guinea. In the south-eastern peninsula the men wear tapa belts which are often painted. About the district of Kerepumu, in British New Guinea, tapa belts are worn by the men which are painted in a peculiar manner with grey and orange pigments. In Fig. 51 we have two typical patterns. It is obvious that the interlaced design would be easily arrived at in a plaited belt, but it is highly improbable that it is, so to speak, indigenous to the tapa.

In all the other examples of painted tapa known to me from British New Guinea, angular designs alone occur.

Professor von den Steinen discovered in Central Brazil some patterns, which most people would designate as "geometrical," painted on pieces of bark which formed a frieze round a chief's house. These patterns (Fig. 52) are derived from serial repetitions of the minute triangular garment which constitutes the sole clothing of the women. This is a good example of the necessity for local information concerning the significance of designs. I would refer the reader to later pages for further examples of analogous patterns from the same district.

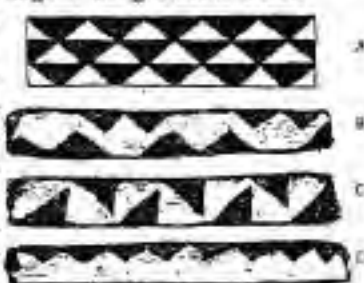


FIG. 52.—Designs derived from *akari* (woman's covering); A, B, C, *Ikari* tribe, Central Brazil; D, *Aché* tribe, Central Brazil. After Von den Steinen; greatly reduced.

4. *Stenomorphic Pottery.*

Perhaps no manufacture is of such importance to anthropologists as pottery. In Europe pottery first appeared in what is termed by archaeologists the Neolithic Age, or that period of human history when man had learnt to neatly chip and to polish his stone implements, but had not as yet discovered metal. Amongst living people the Australians and the Polynesians are the only great groups among whom pottery is unknown.¹ There can be little doubt that the

¹ In Oceanic pottery is unknown save in the West, and there only sporadically. It is absent in Polynesia except in the Tonga Islands, where it is doubtless due to Fiji influence. Its distribution in Melanesia is erratic; for example, it occurs in the Fiji Islands, New Caledonia, and the Loyalty Islands. Rude, unglazed dishes are made in Eschschau Santo (R. H. Collingridge, *The Melanesians*, 1891, p. 315) but not

ceramic art has been independently discovered in various parts of the world, and Mr. Cushing believes that this has been the case even in America.

Earthen vessels are comparatively easy to make, and though they are brittle, their fragments, when properly baked, are almost indestructible. The history of man is unconsciously written largely on shards, and the elucidation of these unwritten records is as interesting and important as the deciphering of the cuneiform inscriptions on the clay tablets of Assyria. The Book of Pots has yet to be written, but materials for its compilation lie scattered throughout the great literature of archaeology, anthropology, and ceramics, and in the specimens in a multitude of museums and

Aurota, in Penterost and Lepera' Island in the New Hebrides, nor in Banks' Islands, Torres Islands, Santa Cruz Group, and most of the Solomon Islands. While wanting in the Bismarck Archipelago, it occurs in New Guinea. But even where pottery is made it is very local and confined to certain tribes. For example, in British New Guinea (A. C. Haddon, *The Decorative Art of British New Guinea*, 1904, pp. 149, 223-224) it is made only in the south-east peninsula and in some of the adjacent islands. In scattered villages, or even in pairs of villages, from Yule Island to Madja in Asama, pottery is made from clay in the lump; but in the Engineer Group, and especially in Wari (or Tessa Island), the clay is laid down in a spiral, and no stone and bender are used, but it is smoothed by a Teflon shell. This method is described and figured by Dr. Finckh (O. Finckh, *Sensafabriken*, 1888, p. 280; *Ethnological Atlas*, 1888, Plate IV.). The upper border of these pots, he says, "exhibits various simple band patterns, which are scratched with fork-like bamboo instruments, and which serve not as ornamentation but as trade-marks. Thus here also (as at Bilibili) each woman has her own mark, with which she signs her fabrication." I have elsewhere (cf. *Decorative Art of British New Guinea*, p. 223) printed an extract from the unpublished journal of Dr. H. O. Forbes, in which he gives an account of the method of making pottery at Wari. Fig. 23 is a copy of Dr. Forbes' sketches of these slightly decorated vessels. In German New Guinea (Kaiser Wilhelm's Land) pottery is made from the lump, as among the Meka of British New Guinea, at Sochstroh River (Humboldt Bay), Goce Bay (Dallmann Harbour), the island of Eilia (Eickstedt Island in Prince Henry Harbour), and more especially at the island of Bilibili in Astrolabe Bay.

collections. The scientific treatment of the subject has been sketched out mainly by W. H. Holmes and F. H. Cushing, and I have not hesitated to borrow largely from the publications of these American anthropologists.

There are three principal methods of making clay vessels—1, by coiling; 2, by modelling; or 3, by casting.

In the first method longer or shorter rope-like pieces of clay are formed. These are laid down in a spiral, and the vessel is built up by a continuation of the same process.

In modelling, or moulding, a lump of clay is taken, and this is first worked with the hands, and then the clay is gradually beaten into the desired shape and thickness by

Dr. Fiesch claims that this pottery is of better quality and better decorated than that of the South-sea coast. Some of the vessels are ornamented with small bosses. But the insignificant patterns, frequently made with the finger-nail, are probably intended, as in Port Moresby, for trade-marks, and not merely for ornament. From their extremely local and scattered distribution it is evident that the pottery makers of New Guinea are not autochthones, but belong to the waves of Melanesian immigration that have washed the coast and neighbouring islands.

In speaking of New Caledonia Baron L. de Vaux (L. de Vaux, "Les Canaques de la Nouvelle-Calédonie," *Rev. d'Ethn.*, ii, 1883, p. 340) says, "formerly the women of Pouébo, Ouhatche, and Pam had the monopoly; now the art tends more and more to disappear as the natives find it more practical to buy trade vessels. They succeeded in making pots to the height of two feet, and very often decorated externally with lizards and frogs in relief. The base being ready, they superimpose rings of well-prepared clay the one above the other, holding them and joining them from the interior with the left hand, whilst they smooth their work externally by means of the right hand and of a little beater of smooth, hard wood."

Mr. Atkinson (J. J. Atkinson, "Notes on Polished Forms of Pottery among Primitive Peoples," *Journ. Anth. Inst.*, xiii, 1893, p. 90) also describes the New Caledonian method of making pottery, and draws attention to the fact that the occasional traces of faint horizontal marks occasioned by the technique "imitate the marks left by pottery made on the system of plastering wickerwork employed by some people," and therefore he suggests a necessary warning not to take the latter method as having been of universal occurrence.

means of a wooden mallet, which hits against a stone or other object that is held inside the incipient vessel.

The third method, by casting, is very rarely employed except by quite civilised peoples. It was a comparatively late discovery that clay vessels could be cast within hollow moulds if the paste was made thin enough.

The coiling and moulding processes are in some places employed side by side, and a vessel may be commenced in the latter method and finished by coiling. (Fig. 55.) This is done by the Nicobarese,¹ Pueblo Indians, and other peoples.

The subject of the forms and decoration of pottery is so important for our study that it will be advisable to quote at considerable length some of the American investigations which bear upon it. Nowhere than in that continent are conditions more favourable to a scientific study of the evolution of ceramics, and our American colleagues happily are fully alive to this fact. Their researches afford valuable sidelights upon the probable history of European prehistoric ceramics.

Mr. J. D. Hunter,² writing of the Mississippi tribes in 1823, says that they spread the clay "over blocks of wood, which have been formed into shapes to suit their convenience or fancy. When sufficiently dried they are removed from the moulds, placed in proper situations, and burned to a hardness suitable to their intended uses. Another method practised by them is to coat the inner surface of baskets, made of rushes or willows, with clay, to any required thickness, and when dry, to burn them as above described."

Messrs. Squier and Davis,³ referring to the vessels of the

¹ E. H. Man, "Nicobar Pottery," *Journ. Anth. Inst.*, xiii., 1893, p. 21.

² J. D. Hunter, *Manners and Customs of several Indian Tribes located west of the Mississippi*, Philadelphia, 1823, p. 295.

³ Squier and Davis, *Ancient Monuments of the Mississippi Valley*, 1845, p. 157.

Gulf Indians, say:—"In the construction of those of large size it was customary to model them in baskets of willow or splints, which at the proper period were burned off, leaving the vessel perfect in form, and retaining the somewhat ornamental markings of their moulds. Some of those found on the Ohio seem to have been modelled in bags or nettings of coarse thread or twisted bark. These practices are still retained by some of the remote western tribes."

Mr. W. H. Holmes¹ points out that "clay has no inherent qualities of a nature to impose a given form or class of forms upon its products, as have wood, bark, bone, or stone. It is so mobile as to be quite free to take form from surroundings. . . . In early stages of culture the processes of art are closely akin to those of nature, the human agent hardly ranking as more than a part of the environment. The primitive artist does not proceed by methods identical with our own. He does not deliberately and freely examine all departments of nature or art, and select for models those things most convenient or most agreeable to fancy; neither does he experiment with the view of inventing new forms. What he attempts depends almost absolutely upon what happens to be suggested by preceding forms.

"The range of models in the ceramic art is at first very limited, and includes only those utensils devoted to the particular use to which the clay vessels are to be applied; later, closely associated objects and utensils are copied. In the first stages of art, when a savage makes a weapon, he modifies or copies a weapon; when he makes a vessel he modifies or copies a vessel" (pp. 445, 446).

The discovery of the art of making pottery was probably in all cases adventitious, the clay being first used for

¹ W. H. Holmes, "Origin and Development of Form and Ornament in Ceramic Art," *Fourth Annual Report of the Bureau of Ethnology*, 1882-83. Washington, 1886.

some other purpose. "The use of clay as a cement in repairing utensils, in protecting combustible vessels from injury by fire, or in building up the walls of shallow vessels, may also have led to the formation of discs or cups, afterwards independently constructed. In any case the objects or utensils with which the clay was associated in its earliest use would impress their forms upon it. Thus, if clay were used in deepening or mending vessels of stone by a given people, it would, when used independently by that people, tend to assume shapes suggested by stone vessels. The same may be said of its use in connection with wood and wicker, or with vessels of other materials. Forms of vessels so derived may be said to have an adventitious origin, yet they are essentially copies, although not so by design" (p. 445). In other words, such pottery is primitively skeuomorphic. Ceramic biomorphs will be dealt with in a later chapter.

Mr. Holmes further points out that the shapes first assumed by vessels in clay depend upon the shape of the vessels employed at the time of the introduction of the art, and these depend, to a great extent, upon the kind and grade of culture of the people acquiring the art, and upon the resources of the country in which they live.

A few examples will suffice. Mr. Holmes (*loc. cit.*, pp. 383, 448) figures an oblong wooden vessel with a projecting rim, which is narrow at the sides but broad at the ends; it is in fact a sort of winged trough; this is sometimes copied in clay. It is evident that the elongated terminal shelf-like projections are more suited to a wooden than to an earthen vessel.

In Fig. 53 we have an Iroquois bark-vessel. Mr. Cushing¹ informs us that in order to produce this form of utensil from a single piece of bark, it is necessary to cut pieces

¹ F. H. Cushing, "A Study of Pueblo Pottery as illustrative of Zuni Culture Growth," *Fourth Annual Report of the Bureau of Ethnology*, 1882-83. Washington, 1885.

out of the margin and fold it. Each fold, when stitched together in the shaping of the vessel, forms a corner at the rim. These corners, and the borders which they form, are decorated with short lines and combinations of lines, composed of coarse embroideries with dyed porcupine quills. Clay vessels (Fig. 54), which strikingly resemble the shape and decoration of these birch or linden bark vessels, are of common occurrence in the lake regions of the United States. There can be but little doubt that the clay vessels are directly derived from the bark vessels.

Mr. Cushing's long and intimate knowledge of the Zuñi Indians has enabled him to speak with authority on matters which might be merely happy suggestions by other anthropologists. Any one can guess at origins and meanings, but there are few who know at first-hand, and who therefore can act as interpreters to the student at home. The following account of Zuñi pottery is taken from Mr. Cushing's paper, entitled "A Study of Pueblo Pottery as illustrative of Zuñi Culture Growth."

So far as language indicates, the earliest Zuñi water vessels were tubes of wood or sections of cane. The latter must speedily have given way to the use of gourds. While the gourd was large and convenient in form, it was difficult of transportation, owing to its fragility. To overcome this it

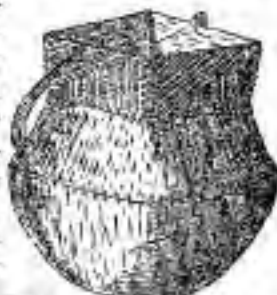


FIG. 53.—Iroquois bark vessel; after Cushing.



FIG. 54.—Rectangular, or Iroquois, type of earthen vessel; after Cushing.

was encased in a coarse sort of wicker-work. Of this there is evidence among the Zunis, in the shape of a series of rudely encased gourd vessels into which the sacred water is said to have been transferred from the tubes.

This crude beginning of the wicker-art in connection with water vessels points towards the development of the wonderful water-tight baskets of the south-west, explaining, too, the resemblance of many of its typical forms to the shapes of gourd vessels. The name for these vessels also supports this view.

Mr. Cushing suggests that water-tight osiery, once known, however difficult of manufacture, would displace the general use of gourd vessels. While the growth of the gourd was restricted to limited areas, the materials for basketry were anywhere at hand. Basket vessels were far stronger and more durable than gourds.

"We may conclude, then," continues Mr. Cushing, "that so long as the Pueblo ancestry were semi-nomadic, basketry supplied the place of pottery, as it still does for the less advanced tribes of the south-west, except in cookery." Thus the *Havasupai*, or *Cocopinos* of Cataract Cañon, Arizona, in 1881, "had not yet forgotten how to boil food in water-tight basketry, by means of hot stones, and continued to roast seeds, crickets, and bits of meat in wicker-trays, coated inside with gritty clay. A round basket-tray, either loosely or closely woven, is evenly coated inside with clay, into which has been kneaded a very large proportion of sand, to prevent contraction and consequent cracking from drying. This lining of clay is pressed, while still soft, into the basket as closely as possible with the hands, and then allowed to dry. The tray thus made is ready for use. The seeds or other substances to be parched are placed inside of it, together with a quantity of glowing wood coals;" these are made to rapidly revolve. "That this clay lining should grow hard from continual heating, and in some instances separate from its matrix of osiers,

is apparent. The clay form thus detached would itself be a perfect roasting vessel" (pp. 484, 485). The modern Zuni name for a parching pan indicates that the shallow vessel of twigs coated with clay for roasting had given birth to the parching pan of earthenware.

In the ancient Zuni country are found vessels of the same form as the basket-pot or boiling basket, still surviving among the Havasupai. These baskets are good examples of the spirally-coiled type of basket.

"Seizing the suggestion afforded by the rude tray-moulded parching-bowls, particularly after it was discovered that if well burned they resisted the effects of water as well as of heat, the ancient potter would naturally attempt in time to reproduce the boiling-basket in clay. She would find that to accomplish this she could not use as a mould the inside of the boiling-basket, as she had the inside of the tray, because its neck was smaller than its body. Nor could she form the vase by plastering the clay outside of the vessel, not only for the same reason, but also because the clay in drying would contract so much that it would crack or scale off. Naturally, then, she pursued the process she was accustomed to in the manufacture of the basket-bottle. That is, she formed a thin rope of soft clay, which, like the wisp of the basket, she coiled around and around a centre to form the bottom, then spirally upon itself, now widening the diameter of each coil more and more, then contracting as she progressed upward until the desired height and form were attained. As the clay was adhesive, each coil was attached to the one already formed by pinching or pressing together the connecting edges at short intervals as the widening went on. This produced corrugations or indentations marvellously resembling the stitches of basket-work. Hence accidentally the vessels thus built up appeared so similar to the basket which had served for its model that evidently it did not seem complete until this feature had been heightened by

art. At any rate, the majority of specimens belonging to this type of pottery, especially those of the older periods during which it was predominant, are distinguished by an indented or incised decoration exactly reproducing the zigzags, serrations, chevrons, terraces, and other characteristic devices of water-tight basketry. Evidently, with a like intention, two little cone-like projections were attached to the neck near the rim of the vessel, which may hence be regarded as survivals of the loops whereby the ends of the strap-handle were attached to the boiling-basket. Although varied in later times to form scrolls, rosettes, and other ornate figures, they continued ever after quite faithful features of the spiral type of pot, and may even sometimes be seen on the cooking vessels of modern Zulu." Corroborative evidence of the connection between the two kinds of receptacles is found in their names, the translation being "coiled cooking-basket" and "coiled earthenware cooking-basket" (pp. 489-491).

Other earthenware vessels had a somewhat different evolutionary history, but they had for their starting-point the food-trencher of coiled wicker-work. When by a perfectly natural sequence of events ornamentation by painting came to be applied to the surface of the bowls a smooth surface was found preferable to a corrugated one, not only because it took paint more readily, but because it formed a far handsomer utensil for household use than if simply decorated by the older methods.

Later the building up of large vessels was no longer accomplished by the spiral method exclusively. "A lump of clay, hollowed out, was shaped how rudely so ever on the bottom of the basket or in the hand, then placed inside of a hemispherical basket-bowl, and stroked until pressed outward to conform with the shape, and to project a little above the edges of its temporary mould, whence it was built up spirally (Fig. 55) until the desired form had been attained, after which it was smoothed by scraping."

With regard to the employment of textile supports by the ancient peoples of North America for the clay vessels during the process of manufacture, Mr. Holmes¹ writes:—"Nets or sacks of pliable materials have been almost exclusively employed. These have been applied to the surface of the vessel, sometimes covering the exterior entirely, and at others only the body or a part of the body. The nets or other fabrics used have generally been removed before the vessel was burned or even dried. . . . I have observed in many cases that handles and ornaments have



FIG. 55.—Clay nucleus in lute mould, with beginning of spiral building; a stage in the formation of a Zuni vessel; after Cushing.

been added, and that impressed and incised designs have been made in the soft clay after the removal of the woven fabric. There would be no need of the support of a net after the vessel had been fully finished and slightly hardened. Furthermore, I have no doubt that these *textilia* were employed as much for the purpose of enhancing the appearance of the vessel as for supporting it during the process of construction. In support of the idea that ornament was a leading consideration in the employment of

¹ W. H. Holmes, "Prehistoric Textile Fabrics of the United States derived from Impressions on Pottery," *Third Ann. Rep. Bureau Ethnol.* Washington, 1884.

these coarse fabrics, we have the well-known fact that simple cord-markings, arranged to form patterns, have been employed by many peoples for embellishment alone. This was a common practice of the ancient inhabitants of Great Britain¹ (p. 398).

The value of the bearing of such observations as the foregoing on the study of the prehistoric pottery of Europe is obvious. In America the record is unbroken; with us, like the great majority of our archaeological finds, we are dealing with fragments, and it is only by careful piecing together that a symmetrical whole can be restored.

Dr. Klemm,² some half-century ago, wrote:—"The imitation (of natural vessels) in clay presupposes numerous trials. In the Friendly Islands [Tonga³] we find vessels which are still in an early stage; they are made of clay, slightly burnt, and enclosed in plaited work; so also the oldest German vessels seem to have been, for we observe on those which remain an ornamentation in which plaiting is imitated by incised lines. What was no longer wanted as a necessity was kept up as an ornament."

Dr. Daniel Wilson⁴ says that the early British urns may

¹ A very interesting collateral line of study has sprung from Mr. Holmes' investigations of the impressions on pottery. By the simple expedient of taking impressions in clay from ancient pottery, and so throwing into high relief the rather obscure intaglio impressions in the originals, he has been able to restore a considerable number of diverse fabrics which were used for the purposes just stated. "The perfect manner in which the fabric in all its details of plaiting and weaving can be brought out is a matter of astonishment; the cloth itself could hardly make all the particulars of its construction more manifest." The perishable material so impressed the clay that when it had long since crumbled into dust the latter was enabled to transmit the details of the structure of a fabric the very existence of which would otherwise never have been known.

² G. Klemm, *Allgemeine Cultur-Geschichte der Menschheit*, vol. I. p. 188.

³ Pottery is made in Fiji, but not in Tonga.

⁴ D. Wilson, *Prehistoric Annals of Scotland* (2nd ed.), 1863, I. p. 420.

have been "strengthened at first by being surrounded with a plaiting of cords or rushes. . . . It is certain that very many of the indented patterns on British pottery have been produced by the impress of twisted cords on the wet clay—the intentional imitation it may be of undesigned indentations originally made up by the plaited network on ruder sun-dried urns."

Professor Tylor¹ refers to Mr. G. J. French's experiments.² "He coated baskets with clay, and found the wicker patterns came out on all the earthen vessels thus made; and he seems to think that some ancient urns still preserved were actually moulded in this way, judging from the lip being marked as if the wicker-work had been turned in over the clay coating inside."

"On the surface of a few ancient vases or urns found in Germany," Mr. Charles Rau³ says, "I noticed those markings which present the appearance of basket-work; I was, however, in doubt whether they were impressions produced by the inside of baskets, or simply ornamental lines traced on the wet clay. Yet, even in the latter case, it would seem that this kind of ornamentation was suggested by the former practice of modelling vessels in baskets."

It may be taken as proved that in a number of cases the forms of pots are taken from natural objects, or from receptacles made of different materials. We cannot demonstrate this in all cases, nor should we expect to, for even assuming this to have been the universal origin, we cannot hope to have the earlier stages preserved to us. The record is imperfect, the evidence of origin is clear in some cases, and probable in others; in some the evidence is lacking.

What applies to the form of pottery applies equally to its

¹ E. B. Tylor, *Researches into the Early History of Mankind* (3rd edn.), 1878, p. 271.

² G. J. French, *An Attempt*, etc., 1858.

³ Charles Rau, "Indian Pottery," *Smithsonian Report*, 1866, p. 346, and 1884, p. 49.

decoration; often it is impossible to disassociate them. The actual or primitive technique of manufacture, too, may exhibit itself in and as an ornament, as, for example, the spiral markings in pottery made in the coil method. We have seen that in some places plaited or woven fabrics have been used to support the soft clay, and these have left their impress. If not previously destroyed, these marks become indelible after the burning of the pottery. These markings being due to the process of manufacture, are repeated in the manufacture of every vessel, and if not purposely smoothed out, expectancy comes into operation, and they may be imitated in a slightly conventional manner even when they may no longer occur in construction, as, for example, when the supports are no longer employed, or in pottery turned on a wheel.

Various methods of plaiting, intertwining, netting, and so forth may thus be transferred as skeuomorphic decoration to pottery. These are at first produced by means of incisions, puckerings of the clay by the fingers, application of accessory coils or pieces of clay, etc. Even the accidental imprints of nails or finger-tips, or of implements, may have suggested certain decoration.

Later on, when pottery was decorated by painting, the same kind of ornamentation was reproduced in the new medium, and as the changed conditions evoked freer treatment, the designs underwent various transformations.

Mr. Holmes¹ discusses the modification of ornament (1) through material, (2) through form, (3) through methods of realisation (p. 458).

(1.) The material of which an object is made must have a very definite effect upon its decoration, and the material is to a very large extent dependent upon the locality. Metal, stone, clay, wood, bone, skins, and textiles are so varied in their structure that they require different artistic treatment,

¹ W. H. Holmes, "Origin and Development of Form and Ornament in Ceramic Art," *Fourth Ann. Rep. Bureau Ethnol.* Washington, 1886.

and it has usually taken a considerable time for a people to discover what is the most suitable form of decoration for an object made of a particular substance.

(2.) The forms of decorated objects exercise a strong influence upon the decorative designs employed. An ornament, as Mr. Holmes remarks, applied originally to a vessel of a given form, accommodates itself to that form pretty much as a costume becomes adjusted to the individual. When it came to be required for another form of vessel, very decided changes might be necessary.

The ancient Pueblo peoples were very fond of rectilinear forms of meander patterns, and many earthen vessels are



FIGS. 56 and 57.—Variations in a motive through the influence of form. Pueblo pottery; after Holmes.

found girdled with a beautiful angular pattern. (Fig. 56.) When, however, the artist has to decorate a vessel which has rounded prominences in its central zone, he finds it very difficult to apply his favourite device, and he is practically compelled to convert his angled into a spiral meander. (Fig. 57.)

(3.) Ornament is modified by the method of its execution, whether by incising, modelling, painting, or stamping; closely associated with these are the peculiarities of construction.

Nearly all woven fabrics encourage, even to compulsion, the use of straight lines in their decoration. Curved lines

are rendered as stepped or broken lines. Fig. 58 illustrates, in a diagrammatic manner, two forms of the same motive as expressed in different arts. The curvilinear freeband scroll, which is readily painted, incised, or moulded in relief, is forced by the constructional character of textiles into square forms, and a rectangular meander or fret will result. Brick-work, mosaics, or whole-coloured tiles also lead to similar results. In the small panel to the left of Fig. 59 it will be

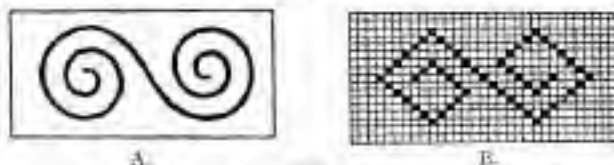


FIG. 58.—A, Freeband form; B, Form imposed by fabric. Forms of the same motive expressed in different arts; after Holmes.



FIG. 59.—Design of Fig. 604 after Holmes.

observed that careless or hurried work has resulted in the rounding of an angular hook, which has been transmitted to pottery from a textile source. I have noticed the 'angularisation' of spirals occurring in New Guinea; this was due, not to change in the material employed, but to the preference which the natives of the Papuan Gulf have to straight and angled lines. (Cf. Figs. 11, 12.) Primitive spirals have been copied by these people, and have gradually become angularised into a rectilinear meander.

Fig. 60 is a drawing of the painted design of a large earthen vessel from the province of Tusayna, in the district of the Colorado Chiquito. From the occurrence of an isolated stepped line in the decoration, Mr. Holmes suggests that the ornamentation had a textile ancestry. The design



FIG. 60.—Ancient Pueblo vase, province of Tusayna. The height and width of the vase are 14 inches; after Holmes.

is made by leaving the white colour of the pot and painting a black background. The "unit of the design," as interpreted by Mr. Holmes, is given in black in Fig. 61. Judging from Fig. 60, which is a representation of the vessel itself, Fig. 59 is a fairly faithful copy of the design; but there is no warrant

on this vase for his joining the scroll pattern at each end with its enclosing line, as in Fig. 61. It is obvious that if this design were logically worked out, it would appear as in the last figure; it may be so on other vases, but Mr. Holmes apparently is concerned with this one. Professor Grünwedel¹ has drawn attention to the mistake of rectifying aboriginal drawings, as we are thereby preventing ourselves from studying the psychology of the natives. According to the

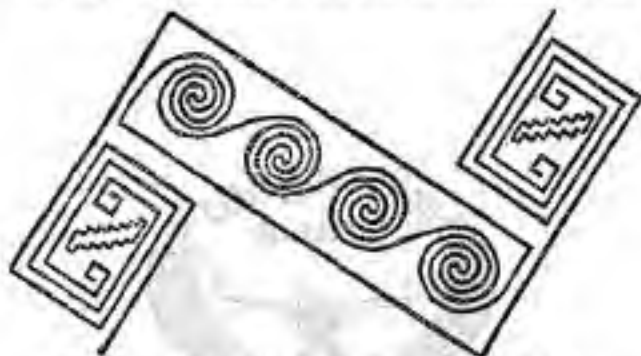


FIG. 61.—"Unit of the design" of Fig. 60; after Holmes.

method we are employing, we are concerned with what actually occurs, and not with what might be.

5. *Stone Schemomorphs of Wooden Buildings.*

Sir C. Fellows,² in his interesting account of his travels in Asia Minor, draws attention to the remarkable rock-tombs which he discovered in Lycia, and which clearly prove that these tombs were models in stone of wooden dwellings.³ At Antiphellus (Plate V., Fig. 1) the timbering is reproduced to every detail of mortise and tenon. The stems of trees,

¹ Cf. p. 134, which is an abstract of what that author says.

² C. Fellows, *A Journal written during an Excursion in Asia Minor*, 1835.

laid horizontally to cover the chamber, are imitated in masonry. They project beyond the wall, and show their ends, as a row of circular sections, in the middle of the entablature. The tree trunk at each extremity of the row was larger than the rest, and has been squared. Sometimes all the trunks are squared, as may be seen at Xanthus (Plate V., Fig. 2); and we witness, as Dr. March points out, the origin of the well-known Greek ornament called "gutta." He also calls attention to the fact that skeuomorphs of timbering were much affected by the Normans, as in their various billet patterns; whilst their capitals often show sections, not alone of branches springing from a tree trunk, but of the enveloping bark also. (Plate I., Fig. 2.)

Another rock tomb at Antiphellus (Plate V., Fig. 3) shows a row of squared trunks projecting beyond the side of the building, as would be a natural arrangement in any wooden house that had a length greater than its width. In the same building are external indications of a second story. They are indications only, for the story does not exist. The device is a skeuomorph, because it is functionless. "But we understand," to again quote from Dr. March, "the origin of our 'string-course,' and we recognise one of the many reasons, in the ancestral training of the eye of our race, why the sight of a large unbroken surface produces in the mind a sense of disappointment, a feeling of unsatisfied expectancy, the anguish that Hood sings—

" 'A wall so blank
That my shadow I thank
For sometimes falling there!'"

The gables of the roof of the old-time houses were often formed by the bent boughs of trees crossing each other at the ridge, as witnessed by an Etruscan hut-urn from Monte Albano (Plate I., Fig. c), and Pompeian wall-paintings (Plate V., Fig. 4.) A finished treatment of the bent bough gable is seen in a tomb at Antiphellus. (Plate V., Fig. 3.)

In the wooden originals of the rock-tombs of Asia Minor (Plate V., Figs. 2, 3) one sees the birth of the gable which, arising as a structural necessity, was perpetuated in stone as the crowning glory of Grecian temples, and ever since has remained as a decorative adjunct to buildings, or the functionless adornment of the humblest household furniture. (Plate I., Figs. D-F.)

6. Skeuomorphic Inappropriateness.

We have seen that as the bronze implement replaced the neolithic celt, so the lashing of the latter became a skeuomorphic decoration on the former. As tape replaced matting the conditioned ornamentation of the early fabric was transmitted to a material which in itself imposed few artistic limitations. The same also with pottery when it was derived from or suggested by baskets; basketry impressed itself on the clay, literally or figuratively as the case may be, and thenceforward pots were doomed to basket-like ornamentation until the possibilities of clay worked out the freedom of the pot from the limitations of the basket. In all the above we have a continuity in function, and it is not very surprising that indications of structure stubbornly persisted.

Everywhere the human mind has become accustomed to certain local patterns, designs, and structures. These are bound up with the sacred associations of family and religion, with the green memories of childhood, and have become as it were indented into the consciousness of the individual. To many minds new designs are unvalued; they awaken no sympathy, they are devoid of associations; like alien plants, they pine away and die.

The pleasure which people take in beauty prompts them to ornament almost everything which admits of decoration, and it is the old patterns and designs which are most frequently copied. So it comes about that these are scattered

with an impartial hand, and often without any regard to appropriateness. By inappropriateness I do not wish to imply that the ornament may not be suitable, but merely that it has no meaning so far as the decorated object is concerned. As a rule the decorative art of the less advanced peoples is far more appropriate¹ than that of civilised. We may not have the clue, but the more we do know the more suitable do we find the decoration to be. The symbols of religious ceremonies are usually depicted on the utensils employed in that rite; the transference of such symbols to purely secular objects would clearly be inappropriate decoration. Our knowledge of the precise use of objects in ethnological collections, and the significance of their form and decoration is in many cases so imperfect that we are not in a position to criticise their appropriateness; but we have only to look around us at the objects of everyday life to see that ornamentation is quite as often inappropriate as appropriate. It will afford continual pleasure to attempt to trace the skeuomorphic (or "technical," as it is sometimes called) origin of many patterns which have wandered far, and have at last found themselves in strange company.

¹ A remarkable example of inappropriate skeuomorphic decoration occurs among some of the tribes of Central Brazil, where the small triangular covering of the women is copied and made into patterns (Fig. 52) on various objects, some being on the bark tablets which run as a frieze round a chief's house (pp. 97, 175).

II.—THE DECORATIVE TRANSFORMATION OF NATURAL OBJECTS.

FROM things made by hands I now pass to natural objects, that we may see how these too are seized upon and modified by primitive folk.

Natural objects fall naturally into two main classes—*inanimate* and *animate* subjects; in other words, *physical* phenomena and *living* beings.

1. *Physicomorpha.*

Under the term of "*physicomorpha*"¹ I propose to describe any representation of an object or operation in the physical world. The heavens and all the powers therein have been depicted in every age and by diverse peoples—usually, but not invariably, with some mystical or religious significance.

Chief of the dreaded powers of the air were the thunder-storm, with its concomitants, the thunder and lightning. These have impressed themselves upon the imagination of man, not only on account of their majesty, but also because of man's impotence. The thunder is the voice of the god, the lightning his destructive and blasting energy.

The most obvious sign for lightning, a zigzag line, is practically ubiquitous. Similarly the sun is variously depicted as a star with few or many rays; as a circle, with a cross or star inscribed within it, or with rays projecting from its periphery. A plain disc, or more often a crescent, stands for the moon.

As the heavenly powers are so generally associated with

¹ *φυσική*—of or concerning the order of external nature; natural, physical.

the heavens, the celestial phenomena and bodies come to represent these cosmical deities, and symbolism is born. In the following pages I touch upon some of the symbolism of physicomorphs in America; later, in dealing with religion and its symbolism, I shall discuss similar symbols in the Old World.

The symbolism of their auto-

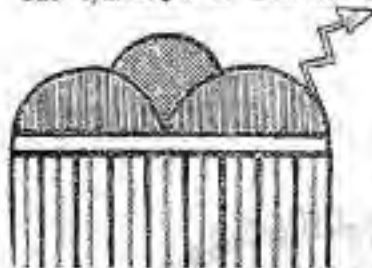


FIG. 62.—Modern Moki rain symbol; after Holmes.



FIG. 63.—Decorative detail from an ancient Pueblo medicine jar; after Holmes.

thones has been, and is still actively and sympathetically studied by American anthropologists, as in a valuable paper¹ by F. H. Cushing, who remarks:—"The semi-circle is classed as emblematic of the rainbow; the obtuse angle as of the sky; the zigzag as lightning; terraces as the sky horizons, and modifications of the latter as the mythic 'ancient sacred place of the spaces,' " and so on.

By combining several of these elementary symbols in a single device, sometimes a mythic idea was beautifully expressed. For example, Fig. 62 is the totem-badge Major J. W. Powell received from the Moki Pueblos of Arizona as a token of his induction into the rain gens of that people. An earlier and simpler form of this occurs on a very ancient sacred medicine jar. (Fig. 63.) The sky (A), the ancient place of the spaces—region of the sky gods—(s), the cloud-lines (c), and the falling rain (n), are combined, and depicted

¹ *A Study of Pueblo Pottery, etc.*, 1884.

to symbolise the storm, which was the objective of the exhortations, rituals, and ceremonials to which the jar was an appurtenance.

Dr. J. Walter Fowkes, in a more recent paper entitled "A few Summer Ceremonials at the Tusayan Pueblos,"¹



FIG. 64.—Rain-cloud tile of the South House in a Tusayan ceremony; after Fowkes.

gives an interesting account of the Flute Ceremony. Several ancient rain-cloud tiles are described; one of them (Fig. 64) was in the room of the South House, which contained the altar. "Like its fellow, this tile had an *O-wose-wā* [cloud] symbol, with falling rain and the two lightning snakes depicted upon it. There were also fourteen broad black

parallel lines on a white ground representing falling rain. Three rain-cloud semi-circles were outlined by a broad black band above the falling rain. The field of the clouds was brown, and the middle cloud, which was the largest, had a conventionalised half-ear of corn,² consisting of two parallel rows of rectangular kernels, each with a dot in the middle. A field of green occupied the whole face of the tile above the figures of the rain-clouds. On this region, rising from the depression which separates the lateral from the medial rain-cloud, one on each side, there was a brown zigzag lightning figure outlined in black. Each of these bore a simple terraced *wā-tā* [a terraced tablet placed on the head of certain figures] on the head" (p. 121).

Mr. Cushing³ has drawn attention to a bowl of which the form as well as its decoration is symbolic. He says, "Thus, upon all sacred vessels, from the drums of the

¹ "A few Summer Ceremonials at the Tusayan Pueblos," *Journal of American Ethnology and Archaeology*, ii., 1892.

² Maize or Indian corn.

³ *Ibid.*, p. 317.

esoteric medicine societies of the priesthood and all vases pertaining to them, to the ceramic appurtenances of the sacred dance or *K'd'd*, all decorations were intentionally emblematic. Of this numerous class of vessels I will choose but one for illustration.

—the prayer-meal-bowl of the *K'd'd*, (Fig. 65.)

In this both form and ornamentation are significant. In explaining how the form of this vessel is held to be symbolic, I will quote a passage from the 'creation myth,' as I rendered it in an article on the origin of corn, belonging to a series on 'Zuni Bread-stuff,' published



FIG. 65.—Zuni prayer-meal-bowl; after Gushing.

this year [1882] in the *Millions* of Indianapolis, Indiana. 'Is not the bowl the emblem of the earth our mother? For from her we draw both food and drink, as a babe draws nourishment from the breast of its mother; and round, as is the rim of a bowl, so is the horizon, termeced with mountains, whence rise the clouds.' This alludes to a medicine bowl, not to one of the handled kind, but I will apply it as far as it goes to the latter. The two terraces on either side of the handle are in representation of the 'ancient sacred place of the spaces,' the handle being the line of the sky, and sometimes painted with the rainbow figure. Now the decorations are a trifle more complex. We may readily perceive that they represent tadpoles, dragon-flies, with also the frog or toad. All this is of easy interpretation. As the tadpole frequents the pools of spring-time he has been adopted as the symbol of spring rains; the dragon-fly hovers over pools in summer, hence typifies

the rains of summer; and the frog, maturing in them later, symbolises the rains of the later seasons; for all these pools are due to rainfall. When, sometimes, the figure of the sacred butterfly replaces that of the dragon-fly, or alternates with it, it symbolises the beneficence of summer; since, by a reverse order of reasoning, the Zuñis think that the butterflies and migratory birds bring the warm season from the 'Land of everlasting summer.'

"Upon vessels of special function, like these we have just noticed, peculiar figures may be regarded as emblematic. On other classes, no matter how evidently conventional and expressive decorations may seem (excepting always totemic designs), it is wise to use great caution in their interpretation as intentional and not merely imitative."

The study of symbols is a peculiarly difficult one, and there is no branch of our subject which contains so many pitfalls for the unwary. The two following paragraphs, respectively by Messrs. Holmes and Cushing,² afford a useful warning:—

"There are those who, seeing these forms already endowed with symbolism, begin at what I conceive to be the wrong end of the process. They derive the form of the symbol directly from the thing symbolised. Thus the current scroll is, with many races, found to be a symbol of water, and its origin is attributed to a literal rendering of the sweep and curl of the waves. It is more probable that the scroll became the symbol of the sea long after its development through agencies similar to those described above, and that the association resulted from the observation of incidental resemblances. This same figure, in use by the Indians of the interior of the continent, is regarded as symbolic of the whirlwind, and it is probable that any symbol-using people will find in the features and phenomena of their environment, whatever it may be, sufficient resemblance to any of their decorative devices to lead to a symbolic association" (p. 460).

² *Annual Report Bureau of Ethnology*, iv.

"To both the scroll or volute and the fret, and modifications of them ages later, the Pueblo has attached meanings. Those who have visited the South-west and ridden over the wide, barren plains during late autumn or early spring have been astonished to find traced on the sand, by no visible agency, perfect concentric circles and scrolls or volutes yards long, and as regular as though drawn by a skilled artist. The circles are made by the wind driving partly broken weed-stalks around and around their places of attachment until the fibres by which they are anchored sever and the stalks are blown away. The volutes are formed by the stems of red-top grass and of a round-topped variety of the *Chenopodium* drifted onward by the whirlwind, yet around and around their bushy adhesive tops. The Pueblos, observing these marks, especially that they are abundant after a wind storm, have wondered at their similarity to the painted scrolls on the pottery of their ancestors. Even to-day they believe the sand marks to be the tracks of the whirlwind, which is a god in their mythology of such distinctive personality that the circling eagle is supposed to be related to him. They have naturally, therefore, explained the analogy above noted by the inference that their ancestors, in painting the volute, had intended to symbolise the whirlwind by representing his tracks. Thenceforward the scroll was drawn on certain classes of pottery to represent the whirlwind and modifications of it (for instance, by the colour-sign belonging to any one of the 'six regions') to signify other personified winds" (p. 515).

It is interesting to note that colours are often symbolic. Thus in a footnote to p. 111, *loc. cit.*, Dr. Fewkes says:—"Red is the colour of the south, yellow of the north, blue of the west, and white of the east. For the west the available pigment used has, however, a green colour, although blue is the colour corresponding to west." A correspondence on the colours of the winds was carried on in the *Academy* in 1883. Dr. Whitley Stokes points out (p. 114) that

among the Mayas of Yucatan red was associated with the east, white with the north, black with the west, and yellow with the south. (Cf. Brinton, *Folk-Lore Journal*, i. p. 246.) In Ireland, east was purple; south, white; north, black; and west, dam; the sub-winds between S. and E. were red and yellow respectively; between S. and W., green and blue; between N. and W., grey and dark brown; between N. and E., dark grey and speckled. Professor Max Müller (p. 302) notes that among the Navajos E. is dark; S., blue; W., yellow; N., white (cf. Mathews, *Amer. Anth.*, April 1883); and in the Veda E. was red; S., white; W., dark or dark blue; and N., very dark. Lastly, Mr. Hildebrandt Friend (p. 318) says that in China and ancient



FIG. 65.—Tracing of a landscape etched on a bamboo tobacco-pipe, in Berlin; three-eighths natural size.

Java there were five deities or rules—(1) black, water, N.; (2) red, fire, S.; (3) green, wood, E.; (4) white, metal, W.; (5) yellow, earth, middle. Colonel Garrick Mallery has also some notes on this subject, *Fourth Ann. Rep. Bureau Ethnol.*, Washington, p. 53, and *Tenth Ann. Rep.*, p. 618.

It is very rarely that landscapes are drawn by savages purely for decorative purposes. Maps or plans, or Engrams which are virtually a kind of elevation section, or even a sort of bird's-eye view, may be limned for mnemonic or directive purposes (p. 209); but pictorial views are so rare that it is worth while giving an illustration of one (Fig. 66) which I found etched on a bamboo tobacco-pipe, from Torres Straits, in the Museum für Völkerkunde, in Berlin.

I have little doubt that the island of Mer is here intended, on account of the shape of the hill and the presence of dome-shaped structures, which I take to be the beehive huts which characterise the eastern tribe of Torres Straits. I add for comparison a rough sketch (Fig. 67) I took of this island, as seen from the south-west by west.

The natives have a legend that this hill, "Gelan," was originally a dugong; and I believe the eye-mark in the native's drawing is intended for the eye of Gelam, "Gelan dan," and the projection to the extreme left to indicate Gelam's nose, "Gelan pit," a small jutting rocky escarpment at the head end of the island, which is enormously exaggerated in the drawing. I take it that the break in the

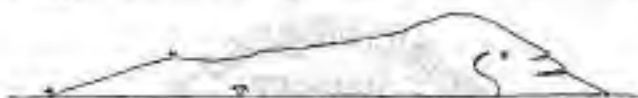


FIG. 67.—Sketch of Mer (Murray Island), by the author, from the south-west-by-west, showing the hill Gelam.

ground of Fig. 66, below the first bird, indicates the hill "Korkor," which forms the tail of the dugong in my sketch, and which is one end of the horse-shoe shaped crater of a volcano. The part extending beyond this is the lava-flow which forms the north-eastern half of the island.¹ The vegetation is suggested in a very perfunctory manner. I do not know what the lines that stream from the apex of the hill are intended for. I should add that to make it approximately topographically accurate, the native picture should be reversed,² assuming my identification to be

¹ Cf. map by author in a paper "On the Geology of Torres Straits," by Professors A. C. Hudson, W. J. Sollas, and G. A. J. Cole. *Trans. Roy. Irish Acad.*, xxx., 1894, pp. 419-470.

² An interesting example of reversal is found on a bamboo tobacco-pipe which I obtained on the island of Maluig in Torres Straits, and which I have given to the National Museum at Washington, U.S.A. On one side of the pipe was cut PA91E, and on the other MÖRAP.

correct. What I imagine to have occurred is as follows:—The artist intended to represent Mer (Murray Island), and he drew the peak of the principal hill, Gelam, from a very characteristic point of view (I have sketches of my own similar to this); in order to give a realistic touch he inserted the eye, which is a prominent block of volcanic ash, and added the nose. The view is suggestive, but it is an impossible one, and it appears to me that this is characteristic of a great deal of the pictorial art of savages.

2. *Biomorphs.*

The terms "zoomorph" and "phyllomorph" have been employed for the representations in art of plants and animals. Although man is, zoologically considered, only a higher animal, it is convenient to retain the term "anthropomorph," which has been used by some writers to express representations of the human form. All three terms have reference to living beings, hence the appropriateness of classing them under the general designation of "biomorph." The biomorph is the representation of anything living in contradistinction to the skeuomorph, which, as we have seen, is the representation of anything

the latter is the name for a bamboo pipe, and the former I understood was the name of the place in Ozadai where the owner had cut the bamboo from which he made the pipe; possibly it was his own name. It will be observed that this name, which is really RIRAU, is printed backwards, and the final U is upside down. I suspect that the occasional reversal of words is due to the method of counting on the fingers which these people employ. They always begin with the little finger of the left hand, and pass from the thumb of the left hand to that of the right. If a man was spelling out a word letter by letter as if he were counting he might readily fall into the error of putting down the first letter in a place corresponding to the little finger of the left hand, and so on. If the man who carried the pipe began with RIRAU, that word would misfit all the digits of the left hand, and so MÖRAP would come right end foremost on the right hand.

made, or of the physicomorph which is the representation of an object or operation in the physical world.

The fact that there is life in the original of the biomorph appears in most cases to exert an influence on the biomorph itself, so that it comes to have what might almost be described as a borrowed vitality.

The distinctive activities or qualities of any living being, more especially in the case of animals, very often cause them to be taken as symbolic of that particular quality. For example, the harmless, gentle, and affectionate dove, which only busies itself with parental cares, has come to be symbolic of peace. There are other reasons to which allusion will be made which have conspired to render biomorphs very important in decorative art.

Biomorphs partake of one characteristic of their originals. They have a life-history. All organisms are born, they grow, they die. During their growth they all pass through greater or less changes. Sometimes these changes, as in the metamorphoses of most insects, have attracted the attention of the least observant, and have appeared to be of such significance as to have been utilised for the illustration of religious doctrines. Whether taking place in full daylight, open to casual observation, or hidden in obscurity, or encapsuled within an egg-shell, marvellous transformations invariably accompany the earlier stages of the development of animals, from the egg stage. The development records an evolution, the history of which is being worked out in detail by the patient investigators of one of the most fascinating of all branches of study—embryology.

We have now to trace the birth, the evolution, and the decay of biomorphs, and we shall find that the subject is scarcely less suggestive and interesting than that of the very animals themselves.

Biomorphs are represented for varied purposes, and with other representations may be classified according to the diagram given in the introductory section (p. 8).

A. Representation of Abstract Ideas of Life.

Even such an abstract idea as the Principle of Life, or Vital Energy, has been indicated in decorative art. "On every class of food- and water-vessels, in collections of both ancient and modern Pueblo pottery (except on pitchers and some sacred receptacles), it may be observed as a singular, yet almost constant feature, that encircling lines, often even



FIG. 68.—Pueblo water-jar; after Cushing.

ornamental zones, are left open or not, as it were, closed at the ends," writes Cushing¹ (p. 510), who adds, "I asked the Indian women, when I saw them making these little spaces with great care, why they took so much pains to leave them open. They replied that to close them was 'fearful'—that this

little space through the line or zone on a vessel was the 'exit trail of life or being.' How it came to be first left open, and why regarded as the 'exit trail,' they could not tell. When a woman has made and painted a vessel she will tell you with an air of relief that it is a 'Made Being'; as she places the vessel in the kiln, she also places in and beside it food. The noise made by a pot when struck or when shimmering on the fire is supposed to be the voice of its associated being. The clang of a pot when it breaks or suddenly cracks in burning is the cry of this being as it escapes or separates from the vessel. That it has departed is argued from the fact that the vase when cracked never

¹ F. H. Cushing, "A Study of Pueblo Pottery as illustrative of Zuni Culture Growth," *Fourth Ann. Rep. Bureau Ethnol.*, 1882-83, Washington, 1886.

resounds as it did when whole. This vague existence never cries out violently unprovoked; but it is supposed to acquire the power of doing so by imitation; hence, no one sings, whistles, or makes other strange or musical sounds resembling those of earthenware under the circumstances above described during the smoothing, polishing, painting, or other processes of finishing. The being thus incited, they think, would surely strive to come out and would break the vessel in so doing.¹ In their native philosophy and worship of water, the latter is supposed to contain the source of continued life, hence life also dwells in a vessel containing water, and having once held water, and in virtue of having done so, it contains the source of life. "If the encircling lines inside of the eating bowl, outside of the water jar, were closed, there would be no exit trail for this invisible source of life, or for its influence or breath." In attempting to arrive at the origin of this, Cushing points out that it is very "difficult to smoothly join a line incised around a clay pot while still soft, and that this difficulty is greater when the ornamental band is laid on in relief. It would be a natural outgrowth of this predicament to leave the ends unjoined, which indeed the savage often did. When paint instead of incision or relief came to be the decorative agent, the lines or bands would be left unjoined in imitation. As those acquainted with Tylor's *Early History of Manhood* will realise, a 'myth of observation' like the above would come to be assigned in after ages."

The soul or spirit as it is supposed to emerge from a person at death is often represented in Christian art as a miniature man or as a winged monstrosity, as a butterfly by the ancient Greeks, or in various ways by different peoples. Souls of deceased persons may be enshrined in living fruit-eating bats,² frigate-birds,² croco-

¹ According to a legend collected by the author in Torres Straits.

² Dr. Collington, *The Melanesians*, p. 124.

diles,¹ lizards,² sharks,³ or other animals. Under certain conditions the representation of any of these forms would be emblematic of the soul.

The dove, flames (or tongues) of fire, wind, and other emblems are symbolic of spirit in Christian art.

II. *Phyllomorphia.*

It has been frequently remarked that plant forms are rarely represented by savages. A possible explanation may be found in the fact that plant life is so passive, it does nothing actively or aggressively as compared with the irrepressible vitality of animals. Thus it does not impress itself on the imagination of backward peoples.

Another explanation has been suggested to me by Dr. Colley March. The need of ornament is based on expectancy. The eye is so accustomed to something in a certain association, that when this is not seen there is experienced a sense of loss. Among savage peoples the eye is accustomed to dwell on vegetal forms which are always present. It is only when they cease to be present, as in the exceptional circumstances of desert places, or walled towns, that the sense of loss can arise.

It is very probable that the reputed paucity of ornamentation derived from the vegetable world amongst primitive



FIG. 69.—Design based on a palm-leaf, Bakafé tribe, Central Brazil; after Von den Steinen.

folk may be partly due to our not recognising it as such. Their conventions are not the same as ours, and they are often satisfied with what appears to us to be a very imperfect realism. Who,

for example, would recognise in Fig. 69 the leaves of a small

¹ M. Uhle, "Holz- und Bambus-Geräthe aus N.W. Neu Guinea," *E. Eth. Mus., Dresden*, vi., 1886, p. 6.

² M. D'Estrey, "Étude ethnographique sur le Léman chez les Peuples Malais et Polynésiens," *L'Anthropologie*, iii., 1892, p. 711.

³ Dr. Codrington, *The Melanesians*, p. 126.

"cabbage"-bearing wild palm? Yet the pattern on this painted bark-tablet of the Bakari tribe of Central Brazil has this significance, according to Professor von den Steinen (cf. p. 175).

Backward people have to be taught to see beauty in nature, and it is very doubtful if the elegance of the form of flower or leaf appeals to them. Bright colours we know please all, and it is the colour or scent of flowers and leaves which causes them to be worn or used in decoration.

One of the very few instances known to me in which vegetable forms are employed in ornamentation by the natives of British New Guinea occurs along the Fly River (Figs. 4, 8). These natives are fond of decorating their drums with leaves, hence it may happen that, on the principle of expectancy, leaves become mentally associated with drum decoration, and in consequence often carved upon drums, and thence, by the constraint of the feeling of expectancy transferred to pipes and other objects; the casual decoration becomes an engraved ornament. On the other hand, the Fly River appears to have been a culture route (pp. 23, 70), and the employment of plant motives (if the majority of these devices are really such) may be partly due to influence from Malaysia. Dr. M. Uhle¹ points out that "The influences of the plant ornamentation of the East Indian Archipelago are also found in Western New Guinea. Although essentially peculiar to the western portion of the East Indian Archipelago it is not wanting in isolated cases in the eastern. Plant ornamentations in perforated carving are known from Halmahera which form a precise parallel with the carvings from Geelvink Bay. Further, the plant ornamentation occurs in Geelvink Bay also in isolated four-petalled flowers, as in Celebes, Halmahera, Timor, and Borneo. [Plant garlands are found on objects from the neighbourhood of Geelvink and Humboldt Bays.] A complete

¹ "Holz- und Bambus-Geräthe aus Nord West New Guinea," *Dresden ethnograph. Anz.*, 1886.

tendrill with four-rayed leaves [or flowers] occurs as a pattern on a pottery-beater from Humboldt Bay.¹ Trustworthy examples from further east in North New Guinea are either absent or are as yet unrecorded. The influence of the western plant ornament is also felt in South-west New Guinea in the district between Kamrau and Etna Bays. The formation of a cruciform pattern through the arrangement of four *Nassa* shells, which occurs not only in Geelrink Bay but also in South-west New Guinea at Wamuka River, appears to be due to the influence of a plant pattern, the frequent four-petalled flower.²

In the central district of British New Guinea plant forms appear to be again met with (Fig. 21). I say "appear," as unless there is direct information from natives it is always risky to hazard a guess as to the meaning of a particular design. The reason for these designs is at present quite obscure, but there can be no doubt that there is a reason for them, and a good one too.

Where plants are represented by savage peoples we shall probably find that as a rule their employment is primarily due to other causes than the selection of beautiful forms and graceful curves for their own sakes. A very good example of this is found among the magic patterns on the combs of the Negritos of Malacca, and I would refer the reader to the section on Sympathetic Magic (p. 235), where this is dealt with at considerable length. It may be that this four-rayed flower which is credited with magical properties is the same which, as Dr. Uhle has pointed out, is so widely spread in the decorative art of the Malay Archipelago and Northern New Guinea.

Few plants have penetrated into the psychical life of man to the same extent as the lotus. The food-plants, which afford sustenance to his body, rarely, as such, enter the portals of art. Even those used in fermentation do not

¹ P. Mantegazza, "Studi antrop. ed etnogr. sulla Nuova Guinea," *Arch. per l'Antrop. e la Etnol.*, vii., 1877, Pl. X., No. 914.

necessarily fare much better. The chief exception is the vine, which from its graceful habit of growth and its decorative leaves and clusters of grapes readily lends itself to artistic treatment, but in this case it was probably on account of the "wine that maketh glad the heart of man," rather than the beauty of the vine, that this creeper became a favourite motive in decorative art. Having once effected an entrance by appealing to the lower senses, the vine retained its position by gratifying the higher. This chapter in the history of art has, however, yet to be written.

Neither mere utility nor intrinsic beauty appear to be a necessary qualification for the establishing of plant-life in decorative art. It is only, so to speak, when plants are provided with a soul, when an inner meaning is read into them, that they become immortalised.

The best example of this is found in the history of the lotus in decorative art. Religion introduced it, symbolism established it, and habit or expectancy retained it.

The Lotus and its Wanderings.

As many mistakes have arisen from the confusion of the Egyptian lotus with the rose water-lily it is necessary to clearly distinguish between them.

The White lotus (*Nymphaea lotus*) and the Blue lotus (*N. caerulea*), which is only a colour variety of the former, have a disc-like leaf, cleft nearly to its centre, which floats on the surface of the water. The calyx has only four coarse sepals which are dark green in colour, and which entirely encase the bud until it begins to open. As it expands the delicate white or sapphire blue petals offer a marked contrast to the sepals. From four points of view of the open flower a central and two lateral sepals will be evident, often when the flower begins to fade the sepals bend downwards, but the petals do not expand to a greater extent than is shown in the accompanying figure (Fig. 7a), in which will also be

seen the characteristic seed-capsule with its rosette-like apex.

The rose water-lily, or water-bean (*Nelumbium speciosum*), according to Professor Goodyear,¹ is not represented in Egyptian pattern ornament. Its leaves (Fig. 71), standing erect out of the water, are bell-shaped and not slit. The calyx has numerous, over-lapping, scale-like sepals. The flower opens widely and the broad petals disappear from view by the expansion of the blossom. The seed-pod resembles the spout of a watering-pot. Sir J. G. Wilkinson says,² "The *Nelumbium*, common in India, grows no longer in Egypt,



FIG. 70.—Rough sketch of the Egyptian lotus (*Nymphaea lotus*); after original drawings by Professor Goodyear.

and the care taken in planting it formerly seems to show it was not indigenous in Egypt.³

In every book dealing with Ancient Egypt numerous figures of the lotus will be noticed either in scenes illustrating the cult of some divinity and as sacred symbols, or in later times employed merely for decorative effect. The same remark applies, though to a less extent, to the art of Chaldean, Assyria, Persia, India, Phœnicia, and several of the Mediterranean countries.

Why should this motive be so widely spread? The most obvious answer has already been suggested. Religion intro-

¹ W. H. Goodyear, *The Grammar of the Lotus*, 1891.

² J. G. Wilkinson, *The Manners and Customs of the Ancient Egyptians*, ii. (3rd edition), p. 407.

duced the lotus to art. We have already noticed the earthly original, now allusion must be briefly made to its symbolism; then its original home must be sought; and finally, some of its wanderings traced, and a few of its variations and transformations noted.

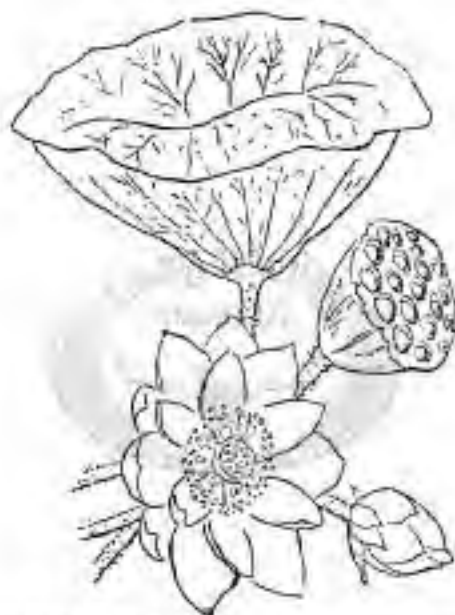


FIG. 71.—Sketch of the Indian lotus (*Nelumbium speciosum*); after *Description de l'Égypte: Histoire Naturelle*, from Gooden.

It appears that in Ancient Egypt the lotus was symbolic of the sun; a text at Denderah says, "The Sun, which was from the beginning, rises like a hawk from the midst of its lotus bud. When the doors of its leaves open in sapphire-coloured brilliancy, it has divided the night from the day."¹

¹ Brugsch, *Religion und Mythologie der Alten Ägypter*, i. p. 103; cf. Gooden, p. 6.

At Denderah a king makes an offering of the lotus to the Sun-god, Horus, with the words, "I offer thee the flower which was in the beginning, the glorious lily of the Great Water."¹



FIG. 72.—Lotus flowers and bud, painted on the coffin of a mummy from the Necropolis of Thebes, Twentieth Dynasty; after Prisse d'Avennes.

—i.e., during the night, and the father of Horus. Horus is sometimes depicted seated on a lotus.

The various animals which were symbolic of the sun or associated with sun-divinities are also placed in direct connection with the lotus, as if to emphasise its solar significance; for example—

The solar-bull is well recognised in Egyptian mythology, the Bull-god Apis being an incarnation of Osiris, and an offspring of the Sun-god, Ptah of Memphis. Similarly also for Assyria, Merodach, "the Bull of Light," was originally a Sun-god; his Syrian equivalent was Baal. The Phœnician Moon-goddess, Astarte, had the bull as her symbol, and the bull of Europa was its counterpart. The Taurus of the Chaldean Zodiac commenced the year.

The lion was another sun-animal both in Egypt and in Chaldea and Assyria.

Among birds the hawk and the eagle were sun symbols, especially the former, and it is sometimes depicted standing on a lotus. The solar-goose is also important in its association with the lotus. (Fig. 129, a.)

¹ Brugsch, *Religion*, etc., i. p. 121; *loc. cit.*, p. 5.

² *Histoire de l'Art Égyptien d'après les Monuments*, 1878.

Fig. 72 is a detail taken from a plate in the second volume of the magnificent atlas by Prisse d'Avennes;² it is part of the offerings on an altar before Osiris, who is crowned with the solar disc. Osiris is the sun in the Lower World

In early Cyprian pottery we find lotus derivatives grouped with the solar cross and other symbols of the sun. (Fig. 129, F.)

The association of the lotus with the sun probably led to its other symbolic relations, and these latter have rather drawn attention away from what is here regarded as the more primitive symbol.

The lotus was a well recognised symbol of life, resurrection, and immortality. It was largely employed in funeral rites in Egypt, and is constantly associated with mummies, and also symbolised the resurrection, but this latter idea was associated in the Egyptian mind with reproductive power, and hence the relation of this also to the lotus. Professor Maspero says:¹ "The assimilation and occasional complete identity of the Supreme God with the sun being once admitted, the assimilation and complete identity of the secondary divine beings with Ra (the sun) were a matter of course. Amon, Osiris, Horus, Ptah, were regarded sometimes as the living soul of Ra, sometimes as Ra himself." From this would result a mingling and extension of symbolism; but upon these troubled waters the lotus calmly rides supreme. Its association with the sun, its connection with reproductive energy, its descent into the grave, and its symbolism of a resurrection have given to the lotus that immortality which it symbolised.

Although lotus designs are profusely scattered up and down in Egyptian art there is no reason for believing that the Egyptians regarded it as a national emblem, but it was a universally recognised symbol. At the beginning of the year it sprouted from its slimy bed and floated beautiful and pure on the surface of the waters. At sunrise the buds opened and studded the water with white or cerulean asters, which closed when night fell. Every autumn it died its annual death only as prelude to the vernal resurrection.

The intensely religious mind of the Ancient Egyptians

¹ Maspero, *Histoire ancienne des Peuples de l'Orient*, p. 31, cf. Gooden, p. 11.

was permeated with the problems of death and elevated by the prospect of immortality. Resurrection and future bliss were articles of firm faith, not merely a pious hope. What wonder then, with this religious saturation of immortality, that the flower which symbolised the resurrection should be depicted in such profusion in their tombs and elsewhere!

If the reader will take the trouble to compare lotus representations in books on Egyptology it will be beyond dispute that it is the white or blue lotus (*Nymphaea*), and not the rose water-lily (*Nelumbium*), which is so ubiquitously delineated.



FIG. 71.—Lotus flower with two leaves, on a vase from the Necropolis of Memphis, Fourth to Fifth Dynasties; after Prisse d'Avennes.

A slightly conventionalised lotus with two of its leaves (Fig. 73) is drawn on a vase contemporaneous with the pyramids, from the Necropolis of Memphis (Fourth and Fifth Dynasties, 3998-3503 B.C.).

The same lotus flower (Fig. 72) appears some two thousand years later in a representation of an offering to Osiris from the Necropolis of Thebes belonging to the Twentieth Dynasty. Indeed, it was painted and carved so frequently for thousands of years that it would be impossible to describe its variations and applications. I must, however, permit myself to allude to one or two examples which are interesting from other points of view. In Plate VIII, Fig. 12, we see single lotus flowers employed in an isolated manner in a border pattern, and alternating with these is another device. The separation of the elements of a border pattern is by no means universal in Egyptian

decorative art; for example, the scroll pattern (Fig. 74) from the Necropolis of Thebes is a good example of a pattern which gives an idea of flow, but even here there is a lack of continuity in



Fig. 75.—Lotus border; from Goudygar, after Prisse d'Avennes.
the spiral band which creates a feeling of dissatisfaction when one attempts to trace out the construction of the design. It is evident that in such patterns the spiral is quite a secondary motive, and it thus has not been worked out logically; the lotus flowers and the rosettes are the essential elements of the pattern.

With the last figure we may compare the scroll detail (Fig. 75) from a Melian vase, the lotus flower being represented by four black marks, and the scroll has acquired that development which is so characteristic of Aegæan art.



FIG. 75.—Lotus scroll detail on a Melian vase; from Goudygar, after Coaze.

Various causes may lead to the evolution of a recognised scheme of decoration of certain objects, but when a new class of objects is to be decorated the artist has a chance to exhibit his originality; even so this is about the last thing which decorative artists do manifest. The constraint of custom appears to exert an influence too potent to be readily snapped, and so the Egyptian decorator, being further tied by religious sentiment, ornamented even extensive areas, such as the ceilings of tombs, with lotus designs, the main elements of which had been elaborated elsewhere.



FIG. 76.—Pattern from the ceiling of a tomb, Necropolis of Thebes, Eighteenth Dynasty; from Coffey, after Prisse d'Avennes.

In Fig. 76 we have a ceiling design in which the lotus is very apparent both in flower and bud; the rosettes, like spiders' webs, may possibly represent the leaves of the lotus (Fig. 70), and we have the same interlocking but discontinuous spirals that occur in Fig. 74.



FIG. 77.—Pattern from the ceiling of a tomb, Necropolis of Thebes, Eighteenth to Nineteenth Dynasties; from Coffey, after Prisse d'Avennes.

A different treatment of the same motive is seen in Fig. 77, but here only the lotus flowers and the interlocking scrolls are employed. Below each flower is a fan-like portion apparently tied on to the former; this may have some significance or it may be merely a convenient method of finishing off the flower.

In these old Egyptian designs the rosette is often associated with the lotus and lotus derivatives, as in Fig. 74; and it may happen, as in Fig. 78, that the former is the most prominent motive. The lotus is here represented solely by the black triangles which occupy the angles of the quadrangular spaces which contain the rosettes; as all events there is good evidence to support this view.

The angularisation of the last pattern gives us Fig. 79, which many people would imagine to be Greek, although, as a matter of fact, it is ancient Egyptian. The rosettes and the angled scrolls alone persist. We cannot speak with certainty as to the reason for the modification of the scrolls, but it is probable that it resulted from an attempt to copy such a painted design as Fig. 78 in textiles, and the pattern metamorphosed by the new conditions was painted on the tomb ceilings along with its more flowing progenitor. For further examples of analogous transference of designs from one technique to another, and their consequent transformation, the reader is referred to p. 112.

Professor Flinders Petrie has stated that the scroll or spiral was one of the greatest factors in the early development of ornament, and only second to the lotus in the part it played in the decorative ideas of the ancient world. What it symbolised, if symbolise anything it did, we know not. Some affect to see in it a representation of the wanderings of the soul, but why, as Professor Petrie suggests, some souls should come to the end of their wanderings in a spiral and others in an oval is not explained. Its oldest use was on the scarabs, where it was



FIG. 78.—Pattern from the ceiling of tomb No. 33, Abd-el-Koussch, Thebes, Seventeenth to Twentieth Dynasties; from Coffey, after Prisse d'Avennes and Goodyear.



FIG. 79.—Pattern from the ceiling of a tomb from Thebes, Seventeenth to Twentieth Dynasties; from Coffey, after Prisse d'Avennes.

clearly used first as "filling-in" ornament. We can first trace it about 3,500 B.C. At first in loose unconnected "C" and "S" links, and afterwards in every variety of combination, continuous as well as unconnected, the scroll line winds its way for ages through the records of Egyptian decoration. Yet there is a clear margin of 1000 years at least between any Egyptian date of its use and its appearance in the art of other ancient countries. From the fact that it is generally coloured yellow in Egyptian designs, Professor Petrie infers that gold was used in these forms

to enclose gems, cloisonné and coloured stones; indeed Schliemann found such work in his explorations at Mycenæ.

Mr. Arthur Evans remarks:¹—"On the twelfth dynasty [about between 2778 and 2565 B.C.] scratches the returning spiral motive, as is well known to Egyptologists, was developed to an extraordinary degree. These purely spiral types, like the twelfth dynasty motives, were also copied by the native Cretan engravers. From Crete, where we find these Aegean forms in actual juxtaposition with their Egyptian prototypes, we can trace them to the early cemeteries of Amorgos, and here and in other Aegean islands like Melos can see them taking before our eyes more elaborate developments. Reinforced a thousand years later by renewed intimacy of contact between the Aegean peoples and the Egypt of Amenophis III., the same system was to regain a fresh vitality as the principal motive of the Mycenaean goldsmith's work. But though this later influence reacted on Mycenaean art [about 1500 B.C.], as can be seen by the Orchomenos ceiling, the root of its spiral decoration is to be found in the earlier 'Aegean' system engrafted long before, in the days of the twelfth dynasty.

"In the wake of early commerce the same spiralfirm motives were to spread still further afield to the Danubian basin, and thence in turn by the valley of the Elbe to the Amber Coast of the North Sea, there to supply the Scandinavian Bronze Age population with their leading decorative designs. Adopted by the Celtic tribes in the Central European area, they took at a somewhat later date a westerly turn, reached Britain with the invading Belgæ, and finally survived in Irish Art."²

Among the most frequent of the decorative designs

¹ A. J. Evans, "Primitive Pictographs and a Pre-Phœnician Script, from Crete and the Peloponnese," *Journ. Hellenic Studies*, xiv., 1894, p. 328.

² Cf. also G. Coffey, "The Origin of Prehistoric Ornament in Ireland," *Journ. Roy. Soc. Ant. Ireland*, 1894, 1895.

employed by the Assyrians are the knop (or bud) and flower pattern and the rosette; and usually these are found in combination. For the former design I shall employ the Greek term "Anthemion."

"That flower," write MM. Perrot and Chipiez,¹ "has been recognised as the Egyptian lotus, but Layard believes its type to have been furnished, perhaps, by a scarlet tulip which is very common towards the beginning of spring in Mesopotamia.² We ourselves believe rather in the imitation of a motive from the stuffs, the jewels, the furniture, and the pottery that Mesopotamia drew from Egypt at a very early date through the intermediary of the Phœnicians. The Phœnicians themselves appropriated the same motive and introduced it with their own manufactures, not only into Mesopotamia but into every country washed by the Mediterranean. Our conjecture is to some extent confirmed by an observation of Sir H. Layard's. This lotus flower is only to be found, he says, in the most recent of Assyrian monuments, in those, namely, that date from the eighth and seventh centuries B.C., centuries during which the Assyrian kings more than once invaded Phœnicia and occupied Egypt.³ In the more ancient bas-reliefs, flowers with a very different aspect—copied in all probability direct from nature—are alone to be found.

"The lotus flower is to be found, moreover, in monuments much older than those of the Sargonids, but that does not in any way disprove the hypothesis of a direct plagiarism. The commercial relations between the valleys of the Nile and the Euphrates date from a much more remote epoch, and about the commencement of the eighteenth dynasty the Egyptians seem to have occupied in force

¹ G. Perrot and C. Chipiez, *A History of Art in Chaldaea and Assyria*, 1884, i. p. 393.

² A. H. Layard, *Discoveries in the Ruins of Nineveh and Babylon*, i. p. 184, note.

³ *Nineveh and its Remains*, ii. p. 212, note.

the basin of the Khabour, the principal affluent of the Euphrates. Layard found many traces of their passage over and sojourn in that district, among them a series of scarabs, many of which bore the superscription of Thothmes III. [1485-1449 B.C.]. So that the points of contact were numerous enough, and the mutual intercourse sufficiently intimate and prolonged, to account for the assimilation by Mesopotamian artists of a motive taken from the flora of Egypt, and to be seen on almost every object imported from the Nile Valley. This imitation appears all the more probable as in the paintings of Theban tombs, dating from a much more remote period than the oldest Ninevite remains, the pattern with its alternate bud and flower is complete (Plate VIII., Fig. 12).

"The Assyrians borrowed their motive from Egypt, but they gave it more than Egyptian perfection. They gave it the definite shapes that even Greece did not disdain to copy. In the Egyptian frieze the cones and flowers are disjointed; their isolation is unsatisfactory both to the eye and the reason. In the Assyrian pattern they are attached to a continuous undulating stem, whose sinuous lines add greatly to the elegance of the composition."

While admitting that the lotus motive overran Assyrian art, there is reason to believe that it did so only because there was an antecedent style upon which it could be engrafted. The pattern shown in Fig. 10, Plate VIII., is an example of an Assyrian anthemion engraved on an ivory panel in the British Museum, and of purely Assyrian workmanship. It is worth while attempting to trace this back as far as possible. In Fig. 4, Plate VIII., we have a pattern painted in red, blue, white, and yellow upon plaster, discovered by Sir Henry Layard in Nebuchadnezzar's palace in Nineveh. In this there is a serial repetition of a disc, or sphere, which is pendant; all the pendants are connected by a single cord, which appears as if it were drawn into loops by their weight.

In Fig. 7, Plate VIII., we have a representation from a stone carving of an Assyrian pavilion, and in Fig. 2 a "tabernacle" from the famous bronze gates of Balawat, which were made for Shalmaneser II., and are now in the British Museum. Yet more simple is the tasselled canopy (Fig. 6) from an enamelled brick from Nimrud, a king who is standing under this canopy has a fringe (Fig. 5) to his robe which is composed of alternate white and yellow tassels. King Sargon (about 722 B.C.) is also represented on a relief from Khorsabad in the Louvre, with a similar fringe (Fig. 1) to the hem of his robe.

Any one who has done any plaiting in bands of two colours knows that if the intersections be truly alternate the fringe along the opposite borders will all be of the same colour as in A, Plate VIII., but if the colours run in stripes the fringe all round will be composed of alternate patches of colour. When bands composed of several threads are employed, it is necessary to knot the strands together at the edge to prevent fraying. A more pleasing border is formed by taking half the strands of one band and tying them to half the strands of the next band of the same colour, and so on (B, Plate VIII.). By this means we naturally obtain a structural root-like origin for each tassel in the fringe, which may be termed the connecting strand. This appears to have been the common method of finishing off the edge of Assyrian textiles.

There is thus no difficulty in accounting for a fringe of tassels (Figs. 1, 5, Plate VIII.). Awnings (Fig. 6) as a protection from the blazing sun were a very common feature in Assyrian life. When the king went out on war-like or hunting expeditions he took with him a large royal tent or pavilion made of "slender columns with rich capitals and a domed roof, made, no doubt, of several skins sewn together, and kept in place by metal weights.¹ The pavilion (Fig. 7) was a civil edifice, the temporary

¹ Ferno and Chipiez, *Assyria* i. p. 194.

resting-place of the sovereign. The same materials were employed in the same spirit in the erection of religious tabernacles" (Fig. 2). It is, however, probable that brightly-woven rugs or mats were employed for the smaller canopies; these would even more require the employment of weights to prevent the wind from blowing about the covering. One can hardly interpret the pendants on the royal pavilion (Fig. 7) in any other manner than as weights to steady the awning. The pendants would in the case of textiles be fastened on to the tassels, probably they would sometimes be placed on alternate tassels. In the pavilion so often referred to the weight pendants are of two shapes, in this also carrying out that alternate arrangement which manifests itself structurally in most textiles, and which consequently gives rise to the feeling of expectancy in other objects. Another example of this is seen in the representation of the vine in Assyrian art, for the decorative sentiment has so possessed the artists as to cause them to depict the branches with a leaf and a bunch of grapes in regular succession.

There is no need to go further than this for the origin of the Assyrian anthemion. We find a fringe of tassels in alternate colours, we find a fringe of canopy weights of alternate design, we assume an occasional alternation of fringe and weight. In all cases these must be serially united by the "connecting strand." How can the stone-carver or the wall-decorator represent these three alternatives? Clearly they would indicate rather than imitate them. What greater realism could we expect than that which we have?

There are many ways of making tassels—for example, each one may be allowed to splay out fan-wise, or it may be tightly tied round the middle, or bound round so as to form a kind of cone or spindle.

Whether as variously tied, or differently coloured tassels, or as alternate tassel and weight, a border of alternate

members organically springing from a common base was constantly before the sight of the artists of this great textile manufacturing people. The conventionalising tendency of decorative art did the rest, and the various forms of Assyrian anthemion would easily follow.

A triple alternation (Fig. 9, Plate VIII.) occurs on an enamelled brick tile from Nimroud in the British Museum. It is characteristically Assyrian in style, but it does not give that effect of repose and satisfied expectancy which we demand from a pattern, and in this respect we cannot regard it as eminently successful.

If this hypothesis of Dr. March's of the evolution of the Assyrian anthemion be correct, this pattern is essentially a skeuomorph, but at the same time certain local plant-forms were probably associated with it.

Let us now turn to the border pattern (Fig. 8, Plate VIII.) of the carved stone thresholds, which are occasionally found in a marvellous state of preservation. Here we have a "knop and flower pattern" which differs as much from the Assyrian style as it resembles that of Egypt. A comparison of this figure with Fig. 12, Plate VIII., will convince most people that borrowing has taken place. It is not always easy to determine how far the Assyrian anthemion has been influenced by native foliage or by conventional designs derived from the local flora. In these threshold borders, however, the Egyptian phyllomorph has grown, as Dr. March points out, like a floral parasite on a skeuomorphic basis. As introduced plants frequently overrun a new country and crowd out native forms, so the lusty lotus invaded the field of Assyrian art, and largely supplanted pre-existing phyllomorphs.

To return for a moment to the Egyptian pattern, the "proto-anthemion," as one may term it, is characterised by the absence of a connecting strand, the buds and flowers springing from a basal line. My friend, Dr. March, with his usual ingenuity, has suggested to me a very plausible

explanation of this fact. The Egyptian pattern was phyllo-morphic from the beginning, originating in symbolism it was primitively a realistic representation of an erect water-plant.

Maspero says the decoration of each part of the Egyptian temple was in consonance with its position. The lower parts of the walls were adorned with long stems of lotus or papyrus—bouquets of water-plants emerging from the water.

This then is the solution of the difficulty. The Egyptian anthemion, derived from plants emerging from the water, has as a rule no connecting strand. The Assyrian variety, derived from a tassel-skeuomorph, is never without its looped base line, is primarily pendant, and consists in the earliest stage of plants that are non-aquatic.

The rosette (Plate VIII., Figs 4, 8, 10) is usually stated to be an essentially Mesopotamian device, but it is scattered up and down in Egyptian and Mediterranean art. (Figs 74, 78, 79, 84.) It may be characteristic of Assyria, but it is by no means peculiar to it.

The rosette in Egypt is probably mainly a lotus-motive; the upper end of the yellow-rayed seed-vessel may be regarded as the chief original, but some are undoubtedly fully expanded lotus flowers seen from above or below, or a group of buds or of flowers arranged radially. However conventionalised it may become, the rosette is most constantly associated with the lotus in Egypt, the land of its birth. Their association elsewhere is only to be expected, as there would naturally be a tendency for the rosette to accompany the knop and flower in their migrations.

According to Professor Flinders Petrie,¹ it is even doubtful whether the rosette was truly of vegetable origin. The use of leather-work seemed to have greatly modified the rosette. Its primitive form did not look floral at all, merely a circle with white dotted lines radiating across. Later,

¹ Newspaper Report of a Lecture delivered at the Royal Institution in May 1894.

there were concentric rings of colours, with the same white dotted lines. The stitched leather theory explained a whole host of peculiar ornaments that could hardly otherwise be understood.

Goodyear¹ points out (p. 101) that no dated example of the rosette is known in Assyria or Chaldaea before the twelfth century B.C.—*Es.*, on the dress of Merodach-idin-akhi, King of Babylon. It occurs with other lotuses in Egypt on the head-dress of Nefert, a statue of the Fourth Dynasty, 3998-3721 B.C. As previously stated, the earlier Egyptian kings of the Eighteenth Dynasty conquered Assyria. The reign of Thothmes III., who, according to a contemporary expression, "drew his frontiers where he pleased," is placed by Professor Flinders Petrie² from 1481-1449 B.C. The Egyptian empire then comprised Abyssinia, the Soudan, Nubia, Syria, Mesopotamia, part of Arabia, Khurdistan, and Armenia.³

In answer to the question, How is it that the fact has been overlooked that the rosette is as familiar a feature of Egyptian ornament as the earliest dated remains of other ornaments? Goodyear (p. 102) says that the answer apparently is that the rosette is very abundantly known on carved slabs from Nineveh, while the architectural surface carvings in Egypt are almost absolutely destitute of rosette ornament, but it is very frequently represented in tomb paintings.

Those who have argued for the Assyrian origin of the rosette appear to have only compared the stone carvings of the two countries in question, but it is well known that no borrowing of architecture took place. There is evidence that portable objects were traded from Egypt to Mesopotamia, and there is no doubt that the purely decorative mural paintings of Egyptian tombs were analogous to the

¹ *Grammar of the Lotus*.

² W. M. Flinders Petrie, *A History of Egypt*, 2, 1894, p. 251.

³ Perrot and Chipiez, *Égypte*, 1, p. 19.

patterns on Egyptian textiles, and these were traded to the East. The thresholds from Assyria were undoubtedly carved in imitation of rugs; from the monuments we may suppose that the walls were often decorated with woven stuffs, the ornamentation of which was transferred to stone and glazed bricks. We may then come to the conclusion that the mural decoration of Assyria was affected by the designs of textiles and other portable articles of merchandise, the idiosyncrasy of this country making itself felt in the selection and adaptation of Egyptian originals.

In dealing with rosettes we must be very careful not to fall into the common error of imagining that things which are similar are necessarily the same. In the course of this book there are several examples of the facility with which such a mistake could arise, and sometimes has arisen. Patterns and designs must primarily be studied *in situ*, and the wandering "from Dan to Beersheba" is to be deprecated as a method. It is only when the indigenous material is insufficient, or fails in its results, that the comparative method should be employed, and then only when history, tradition, or other lines of evidence warrant its use.

Rosettes undoubtedly occur in Egyptian decoration as well as in Assyrian. Goodyear makes a special pleading for the derivation of the latter from the former. The question really is—Are all Assyrian rosettes lotus-motives which originally had their source in Egypt? Few will doubt that Egyptian rosettes may have travelled with other lotus derivatives to Assyria, but it is improbable that a wholly foreign ornament should stud itself so profusely and ubiquitously over Assyrian architecture and manufactures.

I do not profess to be able to suggest what may be the original, or originals, of the primitive Assyrian rosette; but it does seem as if its vitality was increased and its employment further perpetuated by the cross-fertilisation, to speak figuratively, of the immigrant Egyptian variety.

In studying the influence of the lotus in decorative art

we have to travel far afield, as it has left its trace even in India. The art of modern India is, so to speak, a medley composed of foreign motives and influences associated with native designs and religion. Under the term "native" must be included all the artistic influences which have been afforded by the mixed races of that vast peninsula. A very brief and limited survey of some of the historical aspects of the question must suffice.

In very early days "the Chaldeans, whose cry is in their ships," voyaged to India for commercial purposes. Proof of this is found in the discovery of teak wood among the ruins of Mugheir. It is agreed also that there are distinct traces of Assyrian influences in Indian art.

Sir George Birdwood¹ (ii. p. 162) says, "The researches of Mr. Fergusson have shown that stone architecture in India does not begin before the end of the third century B.C.;" and again (i. p. 99), "There is no known Hindu temple older than the sixth or fifth century of the Christian era; and all the earlier stone buildings are Buddhist."

The same author has come to the conclusion (i. p. 146) "that the remarkable European character of the Buddhist sculptures in the Panjab and Afghanistan is due, not to Byzantine, but to Greek influence. They are unmistakably Buddhist sculptures, and may therefore date from A.D. 250 to about A.D. 700; and any of them which are later than the fourth century A.D. may have been executed under Byzantine influence. . . . Dr. Leitner was the first to insist on describing (the Buddhist remains in the neighbourhood of Peshawar in the Panjab) as Greco-Buddhist sculptures. . . . Their resemblance is probably due to their having been executed by Indian workmen from Greek designs or models."

Goodyear remarks, "At a later date Hindu art became saturated with Mahomedan lotus patterns. These were all originally borrowed in the countries conquered by the

¹ G. C. M. Birdwood, *The Industrial Arts of India*, 1880.

Mohammedan Arabs, during the seventh century A.D., Syria, Egypt, North Africa, and Persia." Islam swept into her net the decorative art of the countries she conquered, and as realism was denied to her owing to the Prophet's injunction against depicting human or animal forms, she had to fall back on patterns, but, unknown to her, many of these were lotus derivatives. It was these patterns that the Arabs brought with them to India.¹

"The history of India," continues Goodyear, "thus explains why its apparently favourite water-lily [the Nelumbium] has had so little influence on its ornamental patterns. Although naturalistic rendering of the rose water-lily is found in ancient and modern Oriental art, it must be remembered that this has nothing to do with the dominance of a pattern, which is a matter of technical tradition. It appears that the famous Indian water-lily exercised no visible influence on the art of Egypt, and that Egyptian patterns have invaded its own home by many paths, at many times, borne by waves of historic influence which are admitted to have determined the character of Hindu art since the third century B.C., which is the first century in which this art is known to us."

Examples of Indian forms of the anthemion will be found on Sindhi pottery (Plate VIII, Fig. 11), on Delhi and Cashmere shawls, and on innumerable other objects and temple carvings. If one compares the anthemion combined with an "astragal" moulding in Fig. 80, which is from the Lât at Allahabad, with Figs. 7 and 5, Plate V., which are purely Greek, it will be evident that borrowing has taken

¹ I have a note in the following effect, the origin of which I cannot now trace:—Art under the Mohammedans in the first centuries appears to have been much encouraged, as many drawings and pictures are shown, thus upsetting the general belief that the Koran forbade the representation of human and animal figures. The picture of a rider belonging to the period of Arab civilisation is remarkably spirited, the folds of the rider's garments, as well as the figure itself, being admirably portrayed.

place. One cannot follow Sir George Birdwood¹ when he says this "necking immediately below the capital represents with considerable purity the honeysuckle ornament of the Assyrians, which the Greeks borrowed from them with the Ionic order. Its form is derived originally from the Date *Heu*, but it really represents, conventionally, a flowery lotus, as the Bharhut sculptures enable us to determine. The 'reel and bend' pattern running along the lower border of the necking represents the lotus stalks." This author does not state which lotus he refers to, probably it is the *Nelumbium* or Rose water-lily, but the stalked flowers added on each side of the central anthemion have no distinctive character, nor can I see that the figures he gives of the Bharhut sculptures are any more definite.



FIG. 50.—Anthemion and astragal moulding from the Lât (stone column) at Allahabad; from Birdwood, after Ferguson.

The Buddhist missionaries carried this pattern with them to China, where on some of the pottery unmistakable lotus derivatives occur, and those too of the anthemion series.

From the Orient we must retrace our steps westward. Persian art may be left on one side, as it was largely a legacy of Assyrian.

Among the Mediterranean peoples the Phœnicians claim first attention on account of their early assumed rôle of middle-men. But as Perrot and Chipiez remark, "In the true sense of the word we can hardly say that Phœnicia had a national art. She built much and sculptured much, so we cannot say she had no art at all; but if we attempt to

¹ G. C. M. Birdwood, *The Industrial Art of India*, ii., 1830, p. 157.

define it, it eludes us. Like an unstable chemical compound it dissolves into its elements, and we recognise one as Egyptian, another as Assyrian, and yet another, in its later years, as purely Greek. The only thing that the Phœnicians can claim as their own is the recipe, so to speak, for the mixture.¹ Herodotus tells us that the Phœnicians had in their ship "Egyptian and Assyrian goods."²

Not only did the Phœnicians barter in foreign objects, but they manufactured articles for trade, and were export craftsmen. At the funeral games in honour of Patroklos "the son of Peleus set forth other prizes for fleetness of foot; a mixing-bowl of silver, chased; six measures it held, and in beauty it was far the best in all the earth, for artificers of Sidon wrought it cunningly, and men of the Phœnicians brought it over the misty sea."³ As their home-made goods were intended for foreign markets, they probably copied more or less exactly from Egyptian and Assyrian sources. They were artificers rather than original artists, their object was gain.

On the whole it appears that the Egyptian influence was more patent on Phœnician art than that of Assyrian, but on the other hand, the Phœnician religion was Semitic, and by this they were far more closely allied to Chaldeans and Assyrians than to Egypt.

Through far wanderings and endless trafficking the "Phœnician, practised in deceit, a greedy knave," as Homer dubs him, introduced numberless objects into the Mediterranean littoral which were ornamented with lotus designs or with patterns of lotus origin.

The great skill of the Chaldeans and Assyrians in weaving and embroidery enabled them to produce textiles which were highly valued wherever they found their way. The appropriation of "a goodly Babylonish garment" from the loom of

¹ G. Perrot and C. Chipiez, *Art in Phœnicia and its Dependencies*, 1883, B. p. 427.

² *Iliad*, xxiii. (Lang, Leaf, & Myers.)

Jericho by the unfortunate Actian shows how much these fabrics were prized. We know that the decoration of these beautiful and precious commodities reacted on the designs of Phœnician manufacturers, and directly or indirectly had some effect in guiding the nascent art of Europe.

When the Greeks were a young and growing people they, like most of their neighbours, were forced to trade with the Phœnicians they so despised, and were thus acquainted with trade goods from Mesopotamia and Egypt. The Ionic Greeks were more particularly influenced by Oriental art. The designs from early Greek tombs and the spoils recovered by the spade in recent excavations clearly show the nationality of the foster-mothers of Greek art.

The lessons learnt in childhood are hard to forget, and so, following the traditions of their fathers, the decorators continued to employ the same general patterns and designs that they saw around them and which they had inherited. For centuries we see the anthemion reproduced in architecture (Fig. 82 and Pl. V., Fig. 7), painting, pottery, varied it may be in detail, but essentially the same pattern. Rarely going direct to nature for inspiration, the Greeks were content with endless repetitions of slight variants of the one eternal and highly unconventional design. The mental unrest of the Greeks, which was always seeking something new, was in marked contrast to their decorative conservatism.

When the trade of Europe was taken up by Greeks they further disseminated this dominant motive. In less chaste form we find it in Roman art. The Renaissance gave it, with other matters classical, a new lease of life.

But Europe was not dependent on Greek and Roman influences alone for the spread of the anthemion. The Crusaders brought away with them many Oriental goods, and that, too, from the meeting-place of Europe, Asia, and Africa. Later the Moors invaded Spain, and left as the jetam of their retreat a wealth of matchless decorative art, amongst which our old patterns may also be traced.

By this time it is often flamboyant. (Fig. 81.) The isolated elements of the design may have been the origin of the *fleur de lis*, of which the Prince of Wales' Feathers appear to be a variant.¹



FIG. 81.—Sarcenic Algerian design; from Gooden, after Ravissé.

Throughout the art of the civilised world of to-day we find repeated, again and again, the misnamed honeysuckle pattern, or the anthemion, as it is preferable to call it. Most of our modern examples can be traced to Ancient Greece, but even there it had a hoary antiquity and probably a multiple ancestry. It is not improbable

that future research will demonstrate that the history of this pattern is far more complex than that which I have endeavoured to sketch out. Its amazing longevity may be

¹ The reader is also referred to Dr. E. Bonavia's studies (*Les Fleurs de la Asyrien Monuments and its Outcomes*, 1892) for another theoretical origin of these designs. He lays stress on the practice of fixing horns on trees, and other places, by the Assyrians. We not only see horns and modifications of horns symmetrically used on the stem of their sacred trees, but we meet with them as decorative terminations on the poles of the royal tents (Plate VIII., Figs. 2 and 7). "They were symbols of power against the evil eye and evil spirits" (p. 205). Sooner or later they were sure "to have been taken up by artists, and modified in various ways into decorations for walls of temples, palaces, etc. And so, in truth, we see these horns, at first probably used solely from superstitious reasons, passing afterwards into motives for various decorative purposes" (p. 141).

"What is called the honeysuckle pattern, or anthemion, is nothing but the date tree head supported by horns. . . . This so-called honeysuckle pattern is not, I think, the only outcome of the superstition of tying horns on trees, for I believe the fleur-de-lis, so much used in heraldry as a royal emblem, and on many coats-of-arms, seems but a modified imitation of the real horn-tied on trees or posts" (p. 142). Dr. Bonavia discusses the history of the latter motive. It appears

due to the fact that it arose from various radicles, and when the branches met their differences were not too great to

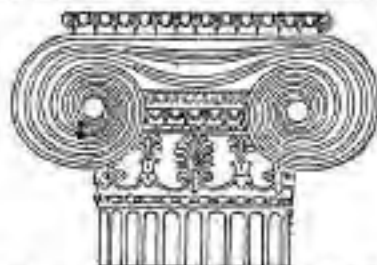


FIG. 81.—Ionic capital of the eastern portico of the Erechtheion.

counterbalance their resemblances, and so a fusion or mingling of elements could easily and naturally result.

probable that it was introduced to French hostility by Louis VII. on his return from the Crusades, and it is also likely that the device was independently associated with the lily and the iris in various countries after its real origin had been forgotten. (This applies equally to Goodyear's or to Bonavia's theory.)

"The top of the Assyrian sacred date-tree, with its supporting horns, was probably taken up by the Greeks and modified into ornaments for friezes." In support of this proposition Dr. Bonavia illustrates an anthemion from the Erechtheion (Fig. 82).

"There are numerous architectural and decorative designs which, I think, are traceable to the Assyrian date-tree and its horns. The Prince of Wales' feathers are perhaps also a descendant of the same motive. There are in it three elements held together by means of a crown, which may be a modification of the ligature" (p. 154). The fluted and the cuspate are also supposed by this author to be "inflex-horns" attached to a wand.

It must be remembered that the ligatures are usually very distinct in Assyrian anthemion (Plate VIII., Figs. 9 and 10), and they require an explanation as much as any other detail of the design. Dr. Bonavia regards them as the lashings of luck-horns which have become modified into volutes. Dr. Colley March, as we have seen, attributes them to a textile origin. On the other hand, we find ligatures in Egyptian lotus designs, as in Fig. 77, where there is no suspicion of Assyrian influence; future research will doubtless show whether the central ligatures in Figs. 85 and 89 are Assyrian, Egyptian, or local in origin.

Mr. Goodyear has an elaborate study of the evolution of the Ionic capital (Fig. 82) from the anthemion. A German architect and critic, Semper,¹ appears to have been the first to derive the Ionic capital from the volutes of the Assyrian palmette (Pl. VIII., Figs. 9, 10) by a process of gradual suppression of the leafy portion and increase of the scroll. Dr. J. T. Clarke² supported and elaborated this



FIG. 83.—Early form of Ionic capital from Neandria; after Clarke.

theory. At Neandria, near Asos, in Asia Minor, he discovered an Ionic capital (Fig. 83) which is a valuable "missing link." But, according to Mr. Goodyear, there is no need to seek an Assyrian origin for this capital when all the intermediate stages can be found

in Egypt and in the Greek Islands.

In Fig. 84 and Fig. 130, 2, we have a lotus with curling



FIG. 84.—Lotus design from a "geometric" vase from Cyprus; after Goodyear.

sepals on pots from Cyprus; no one can dispute that these are really lotuses. The curling sepals become more spiral in Rhodian (Fig. 130, 6), and especially in Melian pottery (Fig.

¹ G. Semper, *Der Stil in den technischen und industriellen Künsten* (2nd ed.), 1878.

² J. T. Clarke, "A Proto-Ionic Capital from the Site of Neandria," *American Jour. of Archaeol.*, 1886, II. p. 1.

85). The central rosette has now become more leaf-like, but there are numerous true Egyptian examples of this, as in a compound flower (Fig. 86) from a tomb ceiling, or



FIG. 85.—Lotus derivative on a vase of the seventh century B.C., from Melos; from Goodyear, after Cuvier.



FIG. 86.—Compound flower, based on the lotus, Thebes, Eighteenth to Twentieth Dynasties; from Goodyear, after *Palais d'Arenes*.

again (Fig. 87), on a blue-glazed lotus pendant from a necklace in the British Museum, of the Nineteenth Dynasty. In



FIG. 87.—Lotus pendant from an Egyptian necklace of the Nineteenth Dynasty; after Goodyear.



FIG. 88.—Anthemion from the Parthenon.

the Owens College Museum, Manchester, there is a somewhat similar enamel tomb amulet of the Twelfth Dynasty (2778-2565 B.C.). The transition from these to the stone

or terra-cotta anthemion of the Parthenon (Fig. 88) is very gradual.

Thus, according to this view, the volute of the Ionic capital is merely a drooping lotus sepal, which became spiral in the Grecian Archipelago. Many of the Ionic capitals, especially the earlier ones, exhibit distinct traces of the central palmette, but eventually only the spirals persisted, and the cleft between the curling sepals was gradually reduced so that their stems came to appear as a transverse band ending in volutes.

In following this view of the history of the Ionic capital we have practically traversed that of the anthemion. The more typical examples of this pattern not only present us with the element which we have already briefly studied, but alternating with it is a trefoil. For this again there are any number of Egyptian originals in which the trefoil indicates a lotus flower; in this case all the petals have been eliminated and only the sepals persist.

Lack of time prevents me from attempting to follow the fascinating evolution of various patterns and designs which adorn Grecian temples and vases; but I must permit myself to indicate a probable origin of an exceedingly common pattern which has also overtaken our own art. I refer to the so-called egg-and-dart moulding of Greek entablatures (Plate V., Fig. 5), and the same motive painted on vases or moulded on the later Samian ware (Plate V., Fig. 6). In these two figures the pattern is drawn in its usual position, but, the better to follow the argument, a typical variety is figured (Fig. 89) reversed. There are many varieties, from a series of U-shaped figures with alternating dots, as on many Greek vases (Fig. 89, 1), through the Samian device (Plate V., Fig. 6) and Erechtium variety (Fig. 82 and Plate V., Fig. 5), to others in which there is greater complexity and more floral forms (Fig. 89, D).

With any given series of designs it is possible to begin at either end—in the one case there is an ascending evolution,

In the other a degeneration. Students of the biological method of treating decorative art will recognise that the latter is by far the most general order in the evolution of patterns, and by adopting it in this case Professor Goodyear has been able to demonstrate the life-history of this pattern to the satisfaction of many students.

In Fig. 89, *A*, we have a typical lotus flower and bud pattern or Greek pattern from Rhodes; the same design occurs in a simplified form on a fragment of Greek pottery

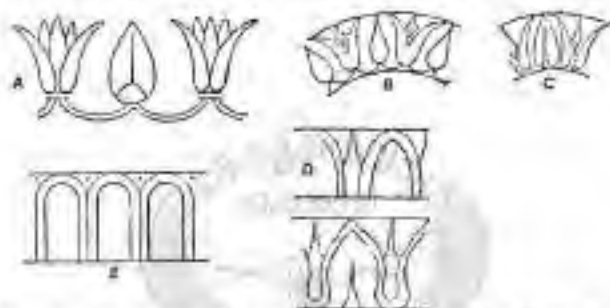


FIG. 89.—Hypothetical derivation of the "egg-and-dart" molding from a lotus pattern; according to Goodyear.

- A*. Lotus anthemion on a vessel from Rhodes; after Salgemann.
- B*, *C*. Lotus anthers on pottery from Naukratis; after Pinders Petrie.
- D*. Egg-and-dart molding from the Erechtheion.
- E*. Degraded egg-and-dart pattern painted on a Greek vase.

from Naukratis (Fig. 89, *B*),¹ in which the lotus flower is now a lotus trefoil; and in Fig. 89, *C*, the pattern is disrupted.

In Greek vases we usually find that decoration has been made with a fine feeling for appropriateness; thus the erect anthemion occurs when the vase is swelling, but where it is contracting an inverted anthemion is placed, because the decorative lines thus widen to correspond with the expan-

¹ W. M. Pinders Petrie, *Naukratis*, i., 1884-85; *Egyptian Exploration Fund*, 1889, Plate VII., Figs. 1, 6.

sion of the vase. Again, in Egyptian tomb ceilings the bordering lotus pattern is inverted, as the base line of the design naturally is made to correspond with the peripheral line of the ceiling—in other words, the lotus anthemion was inverted.

We have then a painted lotus bud and trefoil pattern which was often inverted and as often a simple design. According to this view, the egg of the egg-and-dart pattern is simply a semi-oval left between two lotus trefoils, the dart being the central sepal. When this design came to be incised in stone, the new technique very slightly modified the pattern, and the flat oval areas necessarily came to be carved as rounded or leaf-shaped projections. On these latter occasionally appear reminiscences of the intervening buds, as on the Erechtheum leaf-and-dart moulding. Many variants occur in this device, especially in Roman sculpture.

Professor Goodyear points out that the egg-and-dart moulding as such is unknown to Egyptian patterns, owing to the almost entire absence in Egyptian art of carved or incised lotus borders of any kind, a preference for flat ornament in colour being the rule. Stone carved patterns of any kind in Egyptian art are quite rare before the Ptolemaic period. In Greek art the absence of patterns in projected carving is also a general rule down to the time of the Erechtheum. In Greek art also colour decoration on flat surfaces was the rule in architecture for earlier periods; for example, a leaf-and-dart pattern was painted on a Doric capital in *Ægina*.¹

"The Ionic capital, the 'honey-suckle,' the egg-and-dart moulding, the meander, the various forms of spiral ornament, the guilloché and the rosette, and some few other motives, belong to one ornamental system, and have never been used in Europe, apart from historic connections with their original system, since the Greeks, and have never been used in Europe since prehistoric ages, without distinct

¹ W. H. Goodyear, "Origin of the Acanthus motive and Egg-and-Dart Moulding," *The Architectural Record*, iv., 1892, p. 88.

dependance on the Greeks. As found with the Greeks they can all be traced back to Egyptian sources; except the guilloche, which is only the later variant of the spiral scroll. The guilloche pattern has been found in Egypt on pottery dated to the Twelfth Dynasty (2700 B.C.), which was probably made by foreigners resident in the country, but it may easily be an Egyptian pattern which has not yet been specified as such.

"The Egyptian rosette can be dated to the Fourth Dynasty, 3998-3721 B.C. Since that time its history has been continuous. Since its first transmission to Europe it has never been reinvented in Europe, for there was never an occasion or a chance to reinvent it there.

"The spiral scroll is dated to the Fifth Dynasty, and the meander (at present) to the Thirteenth Dynasty, about 2500-2000 B.C. The Egyptian Ionic capital is dated to the Eighteenth Dynasty, 1587-1357 B.C. The Egyptian anthemion ('honey-suckle' original) is dated to the Twelfth Dynasty (2778-2565 B.C.). A considerably higher antiquity than the given date must be assumed in all cases."¹

This in brief is Professor Goodyear's theory;² it is ingenious, but time will show how far it will convince students of this subject. It is quite possible that the egg-and-dart pattern may have had a multiple origin. Dr. Colley March is still inclined to see in it a kind of artistic reminiscence of the ends of beams (Plate V., Fig. 1) of earlier wooden buildings; but it is highly improbable that the conclusion arrived at by Mr. Hulme is the correct one. He says: "The echinus, or horse-chestnut, is also called the egg-and-tongue or egg-and-dart moulding, a variety of names that may be taken as conclusive of the fact that it bears no great

¹ W. H. Goodyear, "Are Conventional Patterns Spontaneously Generated," *The Architectural Record*, II., 1893, p. 291.

² Prof. Goodyear acknowledges (*Grammar of Lines*) that P. E. Newberry had independently arrived at a similar conclusion in 1885, and that Owen Jones in 1856 and Léon de Vesley in 1870 had suggested a linear original for the egg-and-dart pattern.

resemblance to anything at all, but is a purely arbitrary form."¹ The variety of names is conclusive only of the ignorance of the name-givers as to what the pattern originated from. In future those who write on decorative art will have to prove that any pattern or design is a purely arbitrary form; that assumption is no longer permissible.

We have left the lotus far behind, and though it is hard to believe that the multitudinous designs of so many ages and of such diverse countries are all derived from the sacred flower of Ancient Egypt, yet it may well be that the oldest stock was a lotus derivative, and that the symbolism of that flower gave to it sufficient vitality to spread and multiply and replenish the earth.

C. *Zoomorphs.*

It is a matter of common observation that our children very early take delight in pictures of animals and in making delineations of them. It is further noticeable that the quality of the drawing makes no difference to children, and they are as pleased with the crudest representation of an animal as their elders are with a life-like portrait. In all this the child closely resembles the folk, whether they be the backward classes among ourselves or the less advanced peoples. All these agree in being satisfied with diagrammatic realism.

Savages, however, vary greatly in their power of representing animal forms. In Fig. 3 we have a number of outlines of animals which were etched on bamboo pipes or carved on wooden drums by the Papuan natives of the islands of Torres Straits or of the adjacent coast of New Guinea. The figures are all reduced to the same scale by photography from tracings of the original delineations, and are therefore faithful copies of the originals. A glance at

¹ F. E. Halse, *The Birth and Development of Ornament*, 1893, p. 86.

the figure will show that the animals are drawn with a very fair degree of accuracy, so that in most cases it is perfectly easy to identify the genus of the animal intended. There are numerous little touches which appeal to the eye of the naturalist as indicating keen observation on the part of the artists, for example, the sharks (c, d) are always drawn with unequally lobed tails, the tail of the dugong (x) is accurately rendered; several characteristic details are, as a rule, well brought out in the drawings of the cassowaries (K). On the other hand, there are several anatomical mistakes, as for instance, giving shark-like gill-slits to a bony-fish, or even to a crocodile. The mouth is represented in a sucker-fish (r) as being on the upper side of the head, whereas it should be underneath, and the view of that fish's tail would be impossible from that particular point of view; but these and numerous other similar examples which I could name are merely due to a desire to express several salient features, without regard to the possibility of their being all seen at once. The artists' aim was to give a recognisable representation of animals, and in this they have as a rule succeeded perfectly; it is capricious to expect more from them.

On other parts of the mainland of New Guinea one rarely meets with representations so life-like as these,¹ and nowhere else on that largest of islands are so many kinds of animals drawn. Animals are often depicted by the Australians, but usually these are very poor as works of art; they are also employed in pictography.

Although animals are so frequently drawn by the Torres Straits Islanders, they never arrange them in groups or in series. They are pictures of individuals, drawn for decorative effect, but they have no story to tell. The only exception to this rule occurs in the case of certain animals,

¹ O. Schellong, "Notizen über das Zeichnen der Melanesier," *Internat. Arch. für Ethnogr.*, viii, 1895, p. 57. (Plates VIII, IX.) A. C. Haddon, *The Decorative Art of British New Guinea*.

two of which are sometimes placed symmetrically on the decorated object.

Representations of animals are not uncommon in Melanesia, but they are distinctly of rare occurrence in Polynesia. They occur in great profusion in America from north to south, but here they are predominantly religious or pictographic in significance. Animal forms are not characteristic of African art, except among the Bushmen, and there we find pictures of animals which are comparable with those of the Eskimo or the natives of Torres Straits.

As far back as the time when men hunted the reindeer and wild horse in Western Europe do we find drawings of animals. This was at the time period when the glacial cold



FIG. 90.—Horses etched on an antler from La Madeleine;
from Taylor.

was abating and when men lived in caves, used chipped, unpolished stone implements, and were unacquainted with pottery. In archaeological nomenclature this is known as the *Epoque Magdalénienne* of the Cave Period in the Paleolithic Age. The figures of the mammoth, reindeer, horse (Fig. 90), etc., are usually cleverly etched on bone or ivory, and sometimes they are wonderfully life-like and accurate; the representation of human beings are as a rule very weak indeed.

"The wild horse roamed in immense herds over Europe, and formed the chief food of the paleolithic hunters. In some of the caverns in France the remains of the horse are more abundant than those of any other animal, more even than those of the wild ox. Thus at Solutré, near Macon,

the bones of horses, which had formed the food of the inhabitants of this station, form a deposit nearly 10 feet in depth and more than 300 feet in length, the number of skeletons represented being estimated at from 20,000 to 40,000. This primitive horse was a diminutive animal, not much larger than an ass, standing about 13 hands high, the largest specimens not exceeding 14 hands. But the head was of disproportionate size, and the teeth were very powerful. He resembles the tarpan or wild horse of the Caspian steppes. A spirited representation of two of these wild horses is engraved on an antler found at the station of La Madelaine in the Department of the Dordogne.⁷¹

It is impossible for me to do more than just touch on the subject of the relation of animals to decorative and pictorial art; the few examples I can offer will, however, demonstrate its importance.

Wherever it occurs the crocodile or the alligator, as the case may be, almost invariably finds its way into the decorative art of the district. From north to south the crocodile asserts itself in the decorative art of New Guinea; for further information the reader is referred to Dr. Uhle,⁷² who has made an elaborate study of the crocodile in Malayo-Papuan art, has noted the strange metamorphoses to which it is subjected in north-west New Guinea; he also draws attention to the cult of the reptile in these parts. The belief of a relationship between the crocodile and man occurs among the Malays of Sumatra, Batta, Java, Makassar and the Bugis, Tagals, in Banka, Timor, Bouru, Aru, and the south-western islands. The Javanese have no fear of the crocodile when bathing, they believe that their "grandfathers" and "fathers" could do them no harm. The crocodile is revered in Borneo and killed only when the blood-revenge demands it; their teeth are used as talismans all

⁷¹ Isaac Taylor, *The Origin of the Aryan*, p. 153.

⁷² M. Uhle, "Hoch- und Nambus-Geräthe aus N.W. Neu Guinea," *A. Eth. Mus., Dresden*, VI., 1886, p. 6.

over the island. The inhabitants of Kupang and Timor have an unconquerable fear of the killing of crocodiles and pray by dead ones. Even the Malays (Hovas) of Madagascar are afraid to kill crocodiles, since they would revenge themselves.

From Melanesia we will pass to Central America and take advantage of Mr. W. H. Holmes's masterly study of the ancient art of the province of Chiriquí in the Isthmus of Panama.¹

Wherever it occurs, the crocodile or the alligator, as the case may be, almost invariably finds its way into the decor-



FIG. 91.—Conventional alligator from the "lost colour" ware of Chiriquí after Holmes.

ative art of the district. From north to south the crocodile asserts itself in the decorative art of New Guinea; and, although associated with other animals, the alligator predominates among the zoomorphs of the Chiriquí.

In Fig. 91, we have a highly conventionalised representation of an alligator. The scutes (or scales) are represented by spotted triangles and run along the entire length of the back; a row of dashes in the mouth indicates the teeth.

In another class of ware the treatment is quite different, more clumsy, but prominence is given to a number of

¹ W. H. Holmes, "Ancient Art of the Province of Chiriquí, Columbia," *Sixth Annual Report of the Bureau of Ethnology*, 1884-85. Washington, 1888.

corresponding features; the strong curve of the back, the triangles, dots, the muzzle, and mouth. In Fig. 92 all the leading features are recognisable, but are very much simplified, and the body is without indication of scales, the



FIG. 92.—Simplified figure of an alligator from the "alligator" ware of Chiriquí, after Holmes.

head is without eyes, the jaws are without teeth, and the upward curve of the tip of the upper jaw in the last figure is greatly exaggerated, but this is a common feature in these representations.

The spaces to be decorated also largely determine the lines of modification. In Fig. 93 we have an example crowding an elongated figure into a short rectangular space. The head is turned back over the body, the sunken curve of the back is enormously exaggerated, and the tail is thrown down along the side of the panel.



FIG. 93.—Alligator design, Chiriquí, after Holmes.

It often happens that the animal form, literally rendered, does not fill the panels satisfactorily. The head and tail do not correspond, and there is a lack of balance. In such cases, as Mr. Holmes points out, two heads have been

preferred. The body is given a uniform double curve and the heads are turned down, as in Fig. 94. This figure "is



FIG. 94.—Alligator delineation, greatly modified, Chiriquí;
after Holmes.

extremely interesting on account of its complexity and the novel treatment of the various features. The two feet are placed close together near the middle of the curved body, and on either side of these are the under jaws turned back and armed with dental projections for teeth. The characteristic scale symbols occur at intervals along the back; and very curiously at one place, where there is scant room, simple dots are employed, showing the identity of these two characters. Some curious auxiliary devices, the origin of which is obscure, are used to fill in marginal spaces." Judging from some of the figures in Fig. 100 we may regard the upper supplementary device as another alligator derivative.



FIG. 95.—Highly conventionalised
alligator derivative, Chiriquí;
after Holmes.

Fig. 95 is an extreme form of conventionalised alligator which has become metamorphosed into an apparently meaningless design which is intended to be symmetrical.

In Fig. 96 we have a series showing the degeneration of the all-

gator into a curved line and a spot. The series shown in Fig. 97 illustrate the tendency of linear bands not only to cramp the original in a vertical direction, but to force it into a serial pattern. Fig. 97, A, is a simplification of such a two-headed form as Fig. 94. One might be tempted

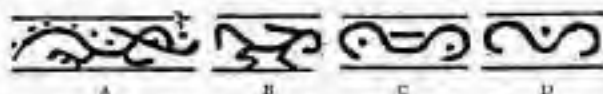


FIG. 96.—Series of derivatives of the alligator, showing stages of simplification, Chiriquí; after Holmes.

to regard it as a doubly tailed form, but such do not appear to have been recognised by Mr. Holmes. The transition from this undoubted alligator derivative to the broad chevron of Fig. 97, E, is quite obvious, the conventional scales, dotted triangles, together with the zigzag



FIG. 97.—Series of alligator derivatives, showing modification through use in narrow zones, Chiriquí; after Holmes.

body alone forming the pattern, and in Fig. 97, F, the latter has disappeared. Mr. Holmes states "there is little doubt that the series continues further, ending with simple curved lines and even with straight lines unaccompanied by auxiliary devices."

Mr. Holmes also points out that the Chiriquí have

arrived at the scroll and fret by way of the alligator. I can here illustrate only two of these (Figs. 98, 99); in these



FIG. 98.—Scroll derived from the body-line of the alligator, Chiriqui; after Holmes.



FIG. 99.—Fret derived from the body-line of the alligator, Chiriqui; after Holmes.

the body of the reptile is the element of the design. In other cases Mr. Holmes finds that parts of the creature, such as head, feet, eye, or scales, assume the role of radicles, and pass through a series of modification ending in purely geometrical devices.

The designs in Fig. 100 are painted upon low rounded prominences on vases, and hence are enclosed in circles.

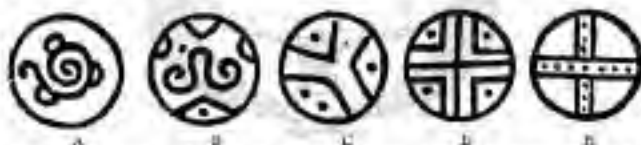


FIG. 100.—Series of alligator derivatives, showing modification through use within a circular area, Chiriqui; after Holmes.

In Fig. 100, A, the alligator is coiled up, but still preserves some of the well-known characters of that reptile. In B, we have the double hook modification of the alligator's body, but the triangles are placed separately against the encircling line. In the next figure the body-line is omitted, and three dotted scales alone represent the animal. The four scales of the next designs assume a symmetrical position, and the central crossed line may represent the alligator's body. In the last figure of this series the cross has become the predominating feature, and the spots have migrated into it, so that the triangles have become mere interspaces.

Finally, Fig. 101 is a zone pattern, painted on an earthen drum, the central zigzag line represents the body of the alligator, and the notched hooks its extremities; these are here arranged with perfect regularity, but sometimes only the latter occur in patterns, and then they are often somewhat irregularly disposed.

From his prolonged study of ancient American art, Mr. Holmes formulates the following generalisation:—"The agencies of modification inherent in the art in its practice are such that any particular animal form extensively employed in decoration is capable of changing into or giving rise to any or to all of the highly conventional decorative



FIG. 101.—Pattern composed of alligator derivatives, from a clay drum painted in the style of the "lost colour group," Chiriquí; after Holmes.

devices upon which our leading ornaments, such as the meander, the scroll, the fret, the chevron, and the guilloche, are based" (p. 187). The importance of the following conclusion is obvious:—"We are absolutely certain that no race, no art, no motive or element in nature or in art can claim the exclusive origination of any one of the well-known or standard conventional devices, and that any race, art, or individual motive is capable of giving rise to any and to all such devices. Nothing can be more absurd than to suppose that the signification or symbolism attaching to a given form is uniform the world over, as the ideas associated with each must vary with the channels through which they were developed" (p. 183).

The investigations of Dr. P. Ehrenreich and Professor

Karl von den Steinen on the decorative art of various tribes in Central Brazil have led to results which may, without exaggeration, be termed startling. The patterns employed by these people typically belong to the class which is popularly described as geometrical. On page 176 I have selected examples of these patterns which will give a fair idea of the style of design.

Dr. Ehrenreich¹ informs us that in the Bakairi chiefs' hut a frieze of blackened bark tablets run along the wall which are painted in white clay with very characteristic figures and patterns of fish. All the geometric figures are in reality diagrammatic representations of concrete objects, mostly animals. "Thus a wavy line with alternating spots denotes a large, dark-spotted colossal snake, the Anaconda (*Eumeces murinus*); a rhomboidal mark signifies a lagoon-fish, whereas a triangle does not by any means indicate that simple geometrical figure, but the small, three-cornered article of women's clothing" (p. 98).

The following quotation is also translated from Dr. Ehrenreich²:—"The ornaments of the Karaya consist of patterns of zigzag lines, crosses, dots, lozenges, and peculiar interrupted meanders, whereas the quadrate and triangle occur only incidentally (that is, owing to the filling up of other figures) and circles are entirely absent. As in the ornamentation of the Xingus tribes, so also here occur those apparently entirely arbitrary geometrical combinations fundamentally of wholly defined concrete presentments, of which the most characteristic traits are therein reproduced. Unfortunately it is not always possible to correctly ascertain the respective natural objects. The frequently occurring cross (Fig. 102, A), which in America has so often given occasion

¹ "Mittheilungen über die zweite Xingus-Expedition in Brasilien," *Zeitschrift für Ethnologie*, xii., 1890, p. 89.

² "Beiträge zur Völkerkunde Brasiliens," *Veröffentlichungen aus dem königlichen Museum für Völkerkunde*, Berlin, ii., 1891, pp. 24, 25.

for amusing hypotheses, is here nothing but a kind of lizard. . . . Also peculiarly characteristic are the extensive wings of a bat (Fig. 102, n), as well as the frequently occurring snake pattern, such as Fig. 102, c, which represents the rattle-snake, while another snake is represented in Fig. 102, d. Accurate representations of men and animals, as we know them to be done so excellently by the Bushmen and Eskimo, do not appear to be forthcoming among the Karaya."

Professor von den Steinen¹ describes the above-mentioned frieze more fully. The pieces of bark, which were from 15 cm. to 40 cm. (6 to 16 inches) broad, were blackened with soot, and the white or yellowish lime applied with the fingers. The frieze itself was over 56 m. (over 184 feet) in length.

I would ask the reader to refer back to Fig. 52, p. 97, although this motive is not a zoomorph, in order to show that triangular designs, or resulting zigzags, may have various origins.

Only one tablet represented a plant. (Fig. 59.) It indicates the leaves of a small "cabbage"-bearing wild palin.

The bulk of the motives for the decorative art of these people, the Schingú tribes (the Xingu tribes of Ehrenreich), are drawn from the animal world; Fig. 103 A, H, I, K, are Bakairi patterns, and Figs. 103 n-r those of the Auetó.

The pattern to the right in Fig. 103, n, indicates a kind of ray, the characteristic rings and dots which ornament the skin of this fish are here represented.

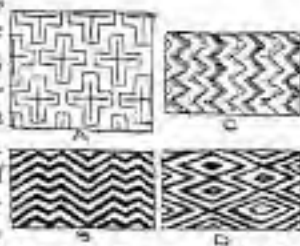


FIG. 102.—Patterns of the Karaya, Central Brazil; after Ehrenreich. A. Lizards; n. Flying bats; c. A rattlesnake; d. A snake. A. Incised on a grave-post; n, c, d. Plaited on the handles of combs.

¹ *Unter den Naturvölkern Zentral-Brasiliens; Reismalerei und Ergebnisse der Zweiten Schingú-Expedition, 1887-88.* Berlin, 1894.



FIG. 107.—Patterns from Central Brazil, after Von den Steinen. A. Bakairi paddle; B-E. *Mureschia* (fish) patterns of the Aueté; F. Loenst design, Bakairi; G. Fish-shaped bait-roarer, Nahuquai; H. *Sakari* (snake) and ray patterns; I. *Jilaya* (snake); J. *Ayau* (snake); K-L. Bakairi tribe.

Common to all the tribes of the Schingú stock is the employment of conventionalised representations of the

merescha. This is a small compressed lagoon-fish, about 19 cm. (7½ inches) long, and 9.5 cm. (3¾ inches) deep; its colour is silver-grey with brown spots. The *merescha* belongs to the genus *Serrasalmo* or *Myletes*; the figure on p. 260, given by Von den Steinen, looks as if it were drawn from a badly-preserved spirit specimen, and one fails to see how Fig. 103, c, for example, could by any stretch of the imagination be considered to suggest that fish. On p. 613 of Dr. Günther's *Introduction to the Study of Fishes* (Edinburgh, 1880) is an outline figure of *Serrasalmo napulensis*; the contour of this fish is approximately rhomboidal, the head, the dorsal fin, and the tail fin occupy three of its angles, and the anal fin practically runs up to the fourth angle. Von den Steinen points out that in most cases representations of these animal-forms are incisions, not paintings, and the diagrammatic rendering of curved lines by angles is due to this fact. The patterns which I am about to describe are common to numerous allied tribes, and everywhere these patterns bear the name by which this kind of fish is locally known.

Sometimes the *merescha* fish is employed singly, but most frequently a number of them are evenly distributed over the decorated surface, and between the fishes single, double, or even several lines may be drawn, as in Fig. 103, b, c, e; these latter represent the net by means of which these fish are caught. Thus we may have a fish-pattern or a fishes-in-net pattern. These patterns are delineated on masks, posts, spinning-whorls, and other objects. Fig. 103, a, is a pattern of the *merescha* fishes-in-net group, but the fishes themselves are entirely filled up with black, and not their angles only.

The Auctō pattern drawn in Fig. 103, e, is intended for a mailed- or armadillo-fish.

On a Bakairi paddle (Fig. 103, A) are incised four circles, which are the ring-markings of a ray, *pinakdi*, on the other side of a transverse line follow two *merescha* in the meshes

of a net, then a *patki*, and finally several *kubmi* fish. Professor von den Steinen believes that the object of this decoration is simply to bring fish close to the paddle. "But it is extremely instructive to see," he continues,¹ "that concerning these scribblings, though they certainly do not denote anything in their order of arrangement, consequently are not picture-writing; however, every single one is by no means a casual flourish, but the diagram of a well-defined object, and consequently, in fact, represents *the element of a picture-writing*."

Zigzags and waved lines are snakes. Fig. 103, *κ*, represents common land-snake, the *agava*, or cobra of Brazil; to the left is the tail, the head is simply rendered, and as the skin of the snake is marked the artist characterised it by adding spots. Very similar is the *suhuri* water-snake or anaconda (*Boa seyntei*), drawn to the left of Fig. 103, *η*. A boa-constrictor is indicated in Fig. 103, *τ*: the row of diamonds left on the dark background, between the two rows of triangles, represents the marking of the snake's skin. The larger terminal diamond to the left is probably the boa's head. A snake is also painted on a Nahuqua bull-roarer (Fig. 103, *σ*).

We have seen that rows of horizontal triangles are *uhuris*, women's triangles, but when they are margined above by a line, as in Fig. 104, *ε*, they are bats; but rows of triangles vertically disposed, as in Fig. 104, *γ*, are hanging bats; Fig. 104, *α*, is also a bat device.

Another triangular ornament (Fig. 105) represents small birds, called by the Bakaïri natives *yarihawise*, that is, they are a particular kind of bird, not birds in general.

¹ *Loc. cit.*, p. 269.

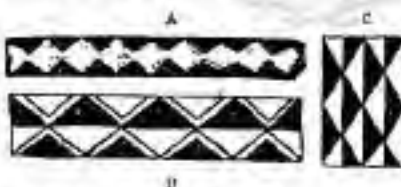


FIG. 104.—Patterns derived from bats; after Von den Steinen. A. Bakaïri; B, C. Awaïti.

Finally, one would naturally consider that the ornament engraved on the post, Fig. 103, D, is simply the favourite *meresche* pattern; but Von den Steinen assures us that the central design is not composed of *meresche*, in which the angles are only slightly filled up, but that it is a locust, the lines arising from the angles of the lozenge being the legs. This locust pattern is, however, associated with true *meresches*, which may be seen between the legs of the locust.

In Europe and in our own country we can study analogous transformations.

More or less recognisable animals break out, as it were into scrolls and floral devices, as on Samian vases (Plate VI., Fig. 1), on Gaulish swords (Fig. 2), on Pompeian walls (Fig. 3), and on the gold ornaments of Tuscany (Fig. 5). In Fig. 4, Plate VI., we have on an ancient pot from New Mexico a decorative treatment of birds which recalls that of the mural paintings of Pompeii.



FIG. 103.—Bird design, Nakahet, Central Brazil, after Van den Steinen.

Often in Greece and Italy symmetrical scrolls are associated with a head. (Plate VI., Fig. 6.) The scrolls themselves may, in some cases, be an animal form which has ended in a flourish, as is taking place in Plate VI., Fig. 5; or in others they may be the remnants of plant motive.

Dr. Colley March calls attention to old bench-ends of English churches, notably those in Cornwall, which are frequently surmounted by a crouching quadruped; at a later period this appears to be converted into a single scroll like that which adorned the old pews in Ormskirk Church. (Plate VI., Fig. 7.)

An ancient silver plate (Plate VI., Fig. 8), found in a tumulus at Largo, Fifeshire, is decorated with the distorted fore half of an animal. The transformation is advanced to flamboyant curves in the zoomorph of the Dunnichen Stone (Plate XI., Fig. 9); but the head and ear and legs can still

be distinguished. It is not quite certain what animal this is intended to represent. Earl Southesk¹ believes it to be the horse, which was sacred to Frey, and is a special symbol of the sun. The second figure is very remarkable, but it seems to be an extreme and foliated form of the same zoomorph.

There are numerous examples of linear series of animals in the early art of Egypt, Assyria, Greece, and other artistic centres, but these do not appear to have developed into patterns, possibly because the units were readily recognisable, on the other hand, serially repeated conventionalised zoomorphs frequently metamorphose into patterns. These patterns by repeated copying tend to become simplified till finally not only is all trace of the original long lost, but the resultant pattern may so resemble other simple patterns as to be indistinguishable from them. This may easily lead to confusion and cause the designs to be classed as one. We thus come to the conclusion that before any pattern can be termed the same as another, its life-history must be studied, otherwise analogy may be confused with homology, and false relationships erected. Things which are similar are not necessarily the same.

At the extreme south-east end of New Guinea and in the adjacent archipelago the most frequent designs are beautiful scroll patterns, which are subject to many variations. I have already² described many of these, and so there is no need to again repeat what I have said, except to remind the reader that all these patterns are variations of serially repeated conventionalised heads of the frigate-bird. I shall again allude to this bird when I deal with the relation of religion to art.

In the same district one occasionally meets with a pattern (Fig. 106) which in some respects resembles the former and appears in some cases to have been confounded with it.

¹ *Origin of Pictish Symbolism*, 1893.

² Pp. 49-56, and at greater length in my *Memoir on the Decorative Art of British New Guinea*.

This one clearly arises from the serial repetition of conventionalised heads of crocodiles. The illustration is part of the carved rim of a wooden bowl in my possession, which probably came from the Trobriands or the Woodlarks. The triangles above the crocodiles' snouts are coloured black, those bounded by their jaws are painted red.

There is yet another method of representing animals which consists in grouping them so as to tell a story, or, in other words, to make a picture.

Grouped animals rarely occur by themselves in decorative art; men, houses, implements, and even vegetation are frequently associated with them. The Arctic peoples, such as the Lapps, Eskimo, etc., greatly affect this form of art.



FIG. 106.—Bubbling of part of the carved rim of a wooden bowl in the author's collection. Probably from the Woodlarks or Trobriands, British New Guinea. One-third natural size.

The bulk of these pictures are representations of hunting scenes, and many incidents in the lives of these hyperboreans are depicted on bone and ivory. There is reason for regarding these as records of particular events (cf. p. 207); but they are also very useful to us as illustrations of native life and industry. Animals are sometimes drawn foreshortened, and confused herds of reindeer are often figured; but the grouping is mainly linear, without effects of perspective being attempted.

This kind of art is extremely rare amongst savage peoples, in fact its presence may be regarded as one of the proofs that the people practising it have passed from a purely savage condition, and have made some advance towards

civilisation. It has reached its highest point in the works of the great animal painters of the present day, and thus has been one of the last forms of graphic art to be perfected.

As a general rule the inferior representations of animals in groups, and of animal pictures generally, are not due to the process of decay. They are the bad workmanship of inferior craftsmen. It is the imperfection of immaturity, not the symptom of decadence.

The last stage of the life-cycle of this class of zoomorphs occurs when incompetent draughtsmen copy the work of a master; when, for example, we see on the walls of country inns cheap and badly-drawn copies of Landseer's pictures.

Animals also play a large part in mythology, and it is often very difficult to determine the limits of totemism in this direction. There are, however, numberless instances of legendary communications and relationships, of friendliness and enmity between animals and men, which have no connection with totemism, and these often form the subject of decorative art. Sometimes the animal alone is represented, at other times both man and animal are depicted, and according to their artistic treatment we may have pictures, or should the zoomorph and anthropolymph be rendered schematically, heteromorphism may result. At present we have to deal with representations of animals which illustrate some belief, myth, or folk-tale. The sacred art of the Hebrews was almost free from zoomorphs, and that of Islam totally so; with these exceptions there has scarcely been a religion in which zoomorphs have not played a greater or less part.

I need only remind the reader of the numerous examples in which animals are depicted in illustration of, or as a kind of mnemonic of a folk-tale, a legend, or myth, and of some sacred tradition or belief. There are so many intermediate stages between these different phases that it is often impossible to draw the line between them. The religious belief, with its sacred tradition of one age, becomes the

myth or the legend of a later period, subsequently it is perpetuated as a folk-tale; later it may serve to amuse children, and lastly it becomes the object of scientific study.

What I have termed the æsthetic life-history may occur to the zoomorph at any or all of these stages of religious decadence. There is no correlation between an extreme or medium phase in the æsthetic cycle and a corresponding stage in the religious series. To take a homely example, the illustrations of the most recently published fairy-tales are as a whole of greater artistic merit than has been the average illustration of sacred narratives during any period of the world's history.

D. Anthropomorphus.

As a general rule, savages are less skilful in the delineation of the human form than they are with representations of animals, nor is it usually employed so frequently as might be expected.

It is for religious purposes that the human form is most frequently represented, and I refer the reader to the section in which religion is dealt with for illustrations of this fact. I employ the term "human form" advisedly, as this includes the images of both gods and men. At one stage of its evolution in the human mind, deity, like the Spectre of Brocken, is the shadowy image of man projected on the clouds. So the gods are most naturally represented as men, but often with special attributes. Now, these attributes are worthy of special study as being the milestones which indicate the distance which any given religious conception has traversed.

In the distant vista of time we can dimly perceive the transformation of the totem animal into the god. In the highest period of Greek sculpture the evolution was, for example, perfected in "ox-eyed lady Hera," consort of Olympian Zeus, and in the Cnidian statue of Demeter, "Mother-Earth," whose archaic representation was a

wooden image of a woman with a mare's head and mane. For thousands of years the Egyptian pantheon was peopled by gods arrested in the process—gorgonised tadpoles of divinity. Still earlier stages may even now be noted among savage peoples.

I know of no example of the preponderating employment of the human face for decorative purposes to be compared with what I have established for the natives of the Papuan Gulf. Illustrations of this will be found in Figs. 18-19, and in my *Memoir on Papuan Art*, but only an examination of a large number of objects from this district of British New Guinea will bring home to the student the remarkable ubiquity of the motive. We have no information concerning the reason for copying human faces; my impression is that it is related to the initiation ceremonies, which we know from the accounts of the Rev. James Chalmers to be very prolonged and important. One would expect to find more animal representations among these people than appear on objects in our ethnographical collections. Possibly these people are passing from the totemistic into the anthropomorphic phase of religion, and the latter finds most expression in their art. However, such speculations are futile until we obtain far more detailed and extended information of their religion than we at present possess.

Human beings are comparatively rarely represented merely for decorative purposes. In pictographs they have no predominating position. But when we come to portraiture the matter is very different; here we have an adequate motive for the delineation of the human form and face; it is, however, very noteworthy that portraiture, as such, only occurs amongst civilised communities. Possibly the explanation of this may be found in the widespread savage philosophy of sympathetic magic. According to this system a portrait has a very vital connection with the subject, and any damage done to the counterfeit would be experienced by the original. Portraiture then would

be too hazardous to health, or even life, to be lightly undertaken.

What we have seen happening to plants and animals is also the fate of men in decorative art. A few examples here will suffice.

New Zealand is one of the places where anthropomorphs abound, due in this case to ancestor cult. The short series of three clubs (Plate VI, Figs. 10-12) illustrates the metamorphosis of the limbs into curvilinear forms. In dealing with the religion of Polynesia I give examples (Figs. 124-128) of the degradation of the human form into "geometrical" patterns.

In the various illustrations which have been given representations of the human form may be isolated, as in Melanesia (Fig. 3, O), Mangala (Fig. 124), and New Zealand (Plate VI, Figs. 10, 12), or they may be double; for example, one frequently finds in Polynesia two god-figures placed back to back, and these may strangely degenerate, as in the examples given by Stolpe¹ and Read.² Human forms placed in linear series are frequent in Mangalan wood-carving (Figs. 127 and 125, A). Fig. 126 illustrates the decoration of a broader area.

We get examples of the selection of one portion of the man in the face patterns of the Papuan Gulf. (Figs. 10-19.)

These are undoubtedly conscious selections from the very commencement, but we find various parts of the body come to be perpetuated, with the elimination of the remainder, owing to differing causes.

The reason for the simplification of the body and the disappearance of the head in the Mangalan art is probably partly due to the fact that savage peoples are usually quite

¹ H. Stolpe, *Evolution in the Ornamental Art of Savage Peoples*, Figs. 3, 34.

² C. H. Read, "On the Origin and Sacred Character of certain Ornaments of the S.E. Pacific," *Journ. Anth. Inst.*, xxi., 1891, Plate XII.

content with suggestions of objects, they do not demand what we term realism. By conventionalising their representations the Mangaians were better able to multiply them, and at the same time to appropriately decorate the object with which they were concerned. It could not be with a view of economising time or labour. "Time," as Stolpe says, "is for them of no importance, they have plenty of it, and usually they are not able even to reckon it." Judging by the skill exhibited by these clever carvers in wood, we cannot put down the simplification of the human body to careless copying.

We have seen that the face may be represented to the exclusion of any other part of the body, but there are examples of parts of the face becoming predominant.

Professor Moseley¹ was, I believe, the first to indicate the evolution which occurred in the images of gods in the Hawaiian group. In some instances the hollow crescent form, which came to represent a face, seems to have been arrived at by an enormous increase in the size of the mouth; in others, as in the case of some wicker images, by a hollowing out of the face altogether; the mouth in the latter, though large, not being widened so as to encroach upon the whole area of the face. Since, in the worship of the gods, food was placed in the mouths, the mouths may have been gradually enlarged as the development of the religion proceeded, in order to contain larger and larger offerings, and the head in the wicker-work image may have been hollowed out for a similar purpose. Moseley traced the degeneration of the human (or god's) face down to a hook-shaped ornament cut out of a sperm whale's tooth.

Some of the carvings of the human face from New Zealand bear a general resemblance to those from Hawaii; but a very noticeable feature in the art of the former island is the protruding tongue. The most interesting develop-

¹ H. N. Moseley, *Notes by a Naturalist on the "Challenger,"* 1879, pp. 304-511.

ment of this member occurs in the Maori *hauā*, or staff of office. At the upper end is what appears, at first sight, to be a spear-point. "This portion, however, does not serve the purpose of offence, but is simply a conventional representation of the human tongue, which, when thrust forth to its utmost conveys, according to Maori ideas, the most bitter insult and defiance. When the chief wishes to make war against any tribe, he calls his own people together, makes a fiery oration, and repeatedly thrusts his *hauā* in the direction of the enemy, each such thrust being accepted as a putting forth of the tongue in defiance. In order to show that the point of the *hauā* is really intended to represent the human tongue, the remainder of it is carved into a grotesque and far-fetched resemblance of the human face, the chief features of which are two enormous circular eyes made of haliotis shell."¹

My friend, S. Tsuboi, has made a special study² of the protruding tongue in New Zealand art. He gives illustrations of thirty-one specimens, and with characteristic Japanese ingenuity he has drawn figures of half-a-dozen models which he has constructed which illustrate the various possible variations, and the lines they may have taken. He has also made numerical tables of possible varieties. I allude to this paper in order to draw the attention of students to graphic methods. I regret that my ignorance of the Japanese language precludes my giving the results of this investigation.

In Ancient Egypt the eye was symbolic, and numberless amulets are found which exhibit one, two, or numerous eyes in varying stages of degeneracy, or in strange modifications. These, too, have been studied and described by Tsuboi.³

¹ J. G. Wood, *The Natural History of Man*, ii., 1870, p. 161.

² S. Tsuboi, "On the Degeneration of Tongue-thrusting Figures in New Zealand Carvings," *Tōyō Gakugei Zasshi* (*Oriental Scientific Magazine*), No. 112, Jan. 25th, 1891.

³ *Oriental Scientific Magazine*, Nov. 25th, 1889.

E. Biomorphic Pottery.

In the description of the primitive methods of pottery manufacture, allusion was made to the fact that vegetable and animal forms were copied by the early artificers.

Although the immediate originals of many kinds of clay vessels were baskets of various kinds, we must not forget that these also were often textile imitations of natural objects. Gourds which are of almost ubiquitous occurrence undoubtedly were early and independently utilised as vessels. For the more convenient portage of them they would be enclosed in netting or basketry. The better the accessories became, the less need for the original foundations, especially as the latter were brittle. From the fact that the shape of certain baskets in a district resemble those of the gourds of that district, we may assume that this process of evolution has operated spontaneously in diverse places. Clay vessels which were modelled from the suggestion of such baskets would thus remotely be phylloforms but having an intermediate skeuomorphic stage.

Instead of this indirect mode of origin a more direct one has often occurred. Messrs. Squier and Davis¹ record: "In some of the southern states (of North America), it is said, the kilns, in which the ancient pottery was baked, are now occasionally to be met with. Some are represented still to contain the ware, partially burned, and retaining the rinds of the gourds, etc., over which they were modelled, and which had not been entirely removed by the fire." They also state that the Indians along the Gulf moulded their vessels "over gourds and other models and baked them in ovens."

It is not necessary to believe that this has everywhere been the original ceramic gourd-derivatives, even among

¹ Squier and Davis, *Ancient Monuments of the Mississippi Valley*, 1848, p. 195.

savage peoples. Once the power of working in clay was acquired, intentional copying of gourds (Figs. 107, 108), or other vegetable vessels, may very well have occurred. This is rendered all the more probable from the fact that animal forms are modelled as earthen vessels. I am not here alluding to figures of men or of totem, sacred, or familiar animals which may belong to a somewhat higher stage of culture than that which we are now more particularly considering; but to clay utensils which are copied from receptacles which are the shells or other parts of animals.



FIG. 107.—Gourd; after Holmes.



FIG. 108.—Clay vessel, made in imitation of a gourd, from a mound in South-eastern Missouri; after Holmes.

Wherever shells of sufficient size are found they are utilised as food and water vessels, and there are numerous instances in various parts of the world of vessels being modelled so as to represent the ancient and familiar utensils.

Clay vessels imitating both marine and fresh-water shells are occasionally obtained from the mounds and graves of the Mississippi Valley. The conch-shell appears to have been a favourite model (Fig. 109, A and B). A clam shell is imitated in C and D. The more conventional forms of these vessels are exceedingly interesting, as they point out

the tendencies and possibilities of modification. The bowl (c) has four rosettes, each consisting of a large central boss with four or five smaller ones surrounding it. The central boss, as in A, is derived from the spire of the conch shell, and the encircling knobs from the nodulated rim of the outer whorl of the shell. Mr. Holmes suggests that in this case the conception is that of four conch shells united in one vessel, the spouts being turned inwards and the spires outwards. With all possible respect to Mr. Holmes, I venture to demur to this interpretation. The fusion of elements which are essentially isolated is rare amongst primitive peoples; it is difficult to imagine how they could

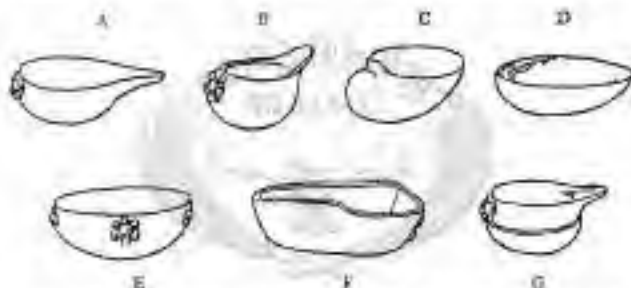


FIG. 109.—Clay vessels imitated from shells, from the mounds and graves of the Mississippi Valley; after Holmes.

conceive of the structural union and fusion of four conch shells. This is very different from the amalgamation of the clay imitations of such vessels as gourds or coco-nuts, for these are frequently fastened in pairs or in small groups to a common string handle, and there is already the idea of multiplicity and the apposition of the vessels. Again, Mr. Holmes does not present us with any intermediate stages of this or similar clay vessels; until such evidence is forthcoming it would be safer to regard this as an example of transference. According to my interpretation,

the rosette derived from the spire of a conch shell was a pleasing motive, and it was applied to and repeated upon a circular bowl, which may, as Mr. Holmes elsewhere¹ suggests, be derived from the lower half of a gourd. A single conch-derivative would be entitled to one rosette only, and the association of ideas would operate in favour of only one being moulded, at all events until a very extreme stage of degeneration had been attained; but in the case of transference there would be no continuity of custom to control the potter, and consequently more scope could be given to his fancy.

A highly conventionalised form is shown in *r* (Fig. 109). The cup is unsymmetrical in outline, and has a few imperfect bosses near one corner, but its resemblance to a shell would hardly be recognised by one unacquainted with more realistic renderings of similar subjects. In *g* we have an imitation of a shell cup placed within a plain cup.

The skins, bladders, and stomachs of animals are very frequently employed as water-carriers. The characteristic forms of these may often be traced in the pottery of the same districts, odd details of form or of surface marking usually persist to a surprising degree.

In Fiji and elsewhere the image of a turtle has been modelled in clay, doubtless because the carapace is often used as a vessel.

While the use of an animal or the part of an animal as a vessel has often led to the imitation of that animal in clay or other material, owing to an association of ideas, we must be very careful not to run to the extreme and to say that there was a primitively utilitarian origin for all zoomorphic vessels. Sympathetic magic and religion are responsible for many, and we must admit that mere fancy must sometimes come into play, and when this is the case theorising is necessarily at fault.

¹ W. H. Holmes, "Pottery of the Ancient Pueblos," *Fourth Annual Report Bureau of Ethnology*, p. 271.

3. *Heteromorphs.*

As previously stated, I propose to adopt the term Heteromorph for a confusion with one another of two or more different skeuomorphs, or with the amalgamation of any two or more biomorphs, or with the combination of any skeuomorph with any biomorph. We may thus have (1) Heteromorphs of skeuomorphs, (2) Heteromorphs of biomorphs, and (3) Heteromorphs of skeuo-biomorphs.

To speak somewhat figuratively, heteromorphism is a sort of disease that may attack the skeuomorph or the biomorph. Whereas the final term of the life-history of the biomorph is, so to speak, senile decay, the result of heteromorphism is a teratological transformation. Accepting this view of the subject, the present section might be entitled "The Pathology of Decorative Art."

Any stage of the life-history of a biomorph, whether it is the expression of decorative or religious art, is liable to be infected by heteromorphism. The only section of graphic art which must from the nature of the case be free from it is pictorial art. Where heteromorphs are introduced into pictures they form one of the subjects of those pictures, the picture itself is not subject to this modifying influence; for example, the introduction of the representation of a sphinx or a gryphon into a picture does not constitute the latter a heteromorph.

A. *Heteromorphs of Skeuomorphs.*

The combination of two different kinds of skeuomorphs does not appear to be of very frequent occurrence, or, at all events, we have not yet trained ourselves to appreciate them.

In Fig. 50 we have an example, which, however, is not particularly satisfactory. It will be noticed that various kinds of plaiting are indicated on this Tongan club; as a matter of fact, if it had really been covered with plaited

work, the latter would have been uniform in its character, although diverse patterns might have been worked into it. If this club had been decorated in a consistent manner the simple in-and-out plaiting of the broad band, as in the middle of the figure to the left, could not occur along with the finer oblique plaiting in other parts of the object.

B. *Heteromorphs of Bismorphs.*

Wherever two or more animals or plants are represented in association there is a tendency for them to amalgamate in process of time. I have shown numerous examples of this in the bird and crocodile motive in Papuan art, and it would be easy to multiply illustrations.

Heteromorphism is especially characteristic of that style of decoration which we call arabesque, or grotesque. This is said to have been the invention of a painter named Ludius in the reign of the Emperor Augustus. That sovereign is said by Pliny to have been the first who thought of covering whole walls with pictures and landscapes. The fashion for the grotesque spread rapidly, for all the buildings of about that date which have been found in good preservation afford numerous and beautiful examples of it. Vitruvius was entirely out of conceit with this sort of ornament, and declares that such fanciful paintings as are not founded in truth cannot be beautiful; but the general voice, both in ancient and modern times, has pronounced a very different opinion. It was from the paintings found in the baths of Rome that Raphael derived the idea of those famous frescoes in the gallery of the Vatican. His example was immediately followed by other distinguished artists. This style derived its name grotesque from the subterranean rooms (*grutte*) in which the originals were usually found—rooms not built below the surface of the ground, but buried by the gradual accumulation of soil and ruined buildings.

A typical example of Pompeian treatment is seen in

Plate VI., Fig. 3, where a bird's tail passes into a floral scroll.

The representations of such mythical monsters of antiquity as the Sphinx, Chimæra, the Harpies, and so forth, are familiar to all. Originally these embodied distinct conceptions which were familiar to the initiated, if not to all. They were symbols and their origin in art was religious; their retention was due to their decorative quality.

C. *Complex Heteromorphs.*

We have now to consider the complications arising from a combination of skeuomorphs and heteromorphs.

Again I have recourse to Dr. Colley March's suggestive essay. He points out that in the north of Europe animals were strangled by the withy-band, as occurs on an incised stone from Gosforth (Plate VII., Fig. 3). Mr. Hildebrand endeavours to show that the so-called Scandinavian sun-snake was produced by the breaking down into curves of the figure of a lion rampant, copied by a succession of artificers, all ignorant of the appearance of a lion. But in the first place, points out Dr. March, the Norse Worm is found long ago in prehistoric rock-sculptures. In the next place, the serpent of the north was symbolic of the sea and not of the sun. And then, it was not the unfamiliar lion that alone broke up into serpentine forms; the skeuomorph assailed the stag, as on King Gorm's stone in Denmark (Plate VII., Fig. 2). Eikthysir, the stag of the sun, who was an attendant and attribute of Frey, is here seen being strangled by the "laidly worm" of Scandinavia. Dr. March suggests that perhaps we may recognise the walrus in rock-sculptures at Crichie in Scotland (Plate VII., Figs. 6, 7). That the walrus was well known to the Northmen, and highly prized both for its hide, from which ships' ropes were made (Plate IV., Fig. 4), and for its tusks, which were a source of ivory, is proved by the Orosian story (I. Orosius, i. 14). "He went thither chiefly for walruses,

because they have noble bone in their teeth, and their skin is very good for ships' ropes." The Earl of Southesk,¹ however, brings forward a considerable body of evidence in favour of the view that this "elephant" symbol, as it has been absurdly termed, is the sun-bear—a symbol of Frey. No animal held a higher place in Scandinavia, and at an early period it was adopted as the national emblem in Denmark, and borne on the standard.

One frequently finds on early Christian sculptured stones that the field on each side of the central cross is occupied by a writhing animal; of these numerous examples occur in the Isle of Man, where they are undoubtedly due to Scandinavian influence. This animal may be recognised in some cases as being a wolf, as on a cross at Michael (Plate VII., Fig. 5).

Two skeuomorphs attack the wolf. The influence of thong-work is seen in Plate VII., Fig. 1; this may be compared with Plate IV., Fig. 4, which is copied from a sculptured stone at Malew, also in the Isle of Man. The latter is one of several Manx skeuomorphs of leather or strap-work.

The withy-land is even more frequently depicted, and on a cross at Gosforth (Plate VII., Fig. 3) the wolf is being strangled by it.

The serpent or dragon also is frequently represented, indeed it seems as if the wolf and the serpent passed insensibly into one another, and nothing is easier than to confound the latter with twisted bands. So the animal fades away, till finally the skeuomorph triumphs, and only the ghost of a zoomorph remains in what, to ordinary eyes, is only an entwisted fibre (Plate VII., Fig. 11).

What then is the significance of this remarkable cycle? The explanation must be sought in the pagan-Christian overlap, at the time when the symbols of Norse mythology were being homologised with those of the Christian faith.

¹ *Origins of Pictish Symbolism*, 1893.

"Three mighty children to my father Lok
 Dab Angerlook, the giantess, bring forth—
 Fenris the wolf, the serpent huge, and me.
 Of these the serpent in the sea ye cast,
 Who since in your despite hath wax'd amain,
 And now with gleaming ring enfoldeth the world.
 Me on this cheerless nether world he threw,
 And gave me place unlighted realms to wile.
 While, on his island in the lake, afar,
 Made fast to the bored crag, by wile not strength
 Solituded, with limber chains lives Fenris bound."

So, in the words of Matthew Arnold, spoke Hela to Hermod on his quest for the restoration of the slain Balder.

At the crack of doom, the Ragnaroks, Frey, Woden, Thor, and Tyr, are predestined to perish. A wolf shall devour the sun, and another shall swallow the moon, and the stars shall vanish out of heaven. Woden shall go first, and shall encounter Fenriswolf, but the wise, one-eyed god shall die. The hammer of the "friend of man" shall not avail against the sea-dragon, and though Thor fights Midgarthsorm, and shall slay him, he himself shall fall dead from the serpent's venom. Garm, the hell-bound, shall fasten upon the one-handed Tyr, and each shall kill the other. Frey shall fall before Swart, the giant with the flaming sword. Then shall Vidar spring forward, the mighty son of the Father of Victory, and shall rend the wolf asunder. "Vidar shall inhabit the city of the gods when all is over," as the giant said to Woden. "Vidar, who outlived the earth-fall, became," says Professor Stephens,¹ "a fitting emblem for that Almighty Lord who overcame Sin and Death," and he is represented on some sculptured stones as a divine Hart, trampling on Fenriswolf and Midgarthsorm.

These strangled wolves and writhing snakes of Scandinavian art represent the portentous struggle of the powers of darkness with the gods when "the Wolf shall devour the Sire of Men; but Vid shall avenge him, and

¹ G. Stephens, *Studies on Northern Mythology*, 1883, p. 157.

shall rend the cold jaws of the Beast." But the new religion possessed a somewhat analogous imagery, and the symbolism of the one readily passed into that of the other. Whether pagan or Christian, the symbolic animal was attacked by the plaited thong or twisted fibres, and the secular handicrafts choked the religious idea. Such a hold had this technique on the mind of the people that it predominated all their art, and even led to the extinction of religious symbolism.

There was, however, another means by which the pagan dragon crept into Christian art. I refer to the legend of Sigurd and Fafni, which was introduced into sepulchral and ecclesiastical carving as late as the fourteenth century by followers of the new faith. I cannot now detail the foundation story of the *Nibelungen Lied*; the point which at present concerns us is the slaying of Fafni in the form of a dragon or serpent by Sigurd with his magic sword.

This and other incidents of the legend are carved on wooden portals or door-pillars of churches, on fonts, and on Christian crosses of stone in many parts of Sweden and Norway, and also in some parts of England, as on the Hutton Cross in Lancaster.

Fafni is often seen passing into a maze of beautiful scroll-work, and in the Hutton Cross he is solely represented by a twisted knot.

Under monkish influence, no doubt, the whole story came by degrees to be looked upon as containing types and proofs of the younger religion. Sigurd became the Christian soldier, forging the sword of the spirit, and his defeat of the serpent could readily be adopted into Christian symbolism.¹

¹ When the Anglo-Saxon had almost forgotten Midgarth's Orm, and the ancient Egyptian snake-symbol, as old as the

¹ For a more detailed treatment the reader is referred to Dr. H. Colley March's essay on "The Pagan-Christian Overlap in the North," *Trans. Lanc. and Cheshire Antiquarian Soc.*, ix., 1892.

Rameside period, had been introduced as a new design (Plate VII, Fig. 8), this itself fell a prey to the dominant skeuomorph, and was doubled and entangled in obedience to the over-mastering expectancy of the day."

"It must be clear," continues Dr. Colley March, "that such transformations as these were due to something more than the successive copying of a copy by ignorant and slovenly artificers, as in those degenerate changes wrought by Gaulish imitators of the stater of Philip of Macedon. In that case the original coin was not before them; they had



FIGS. 110, 111.—Modified human figures on the shaft of a cross at Ilam, near Ashbourne; after Brown.

no artistic impulse or intention, their only object was to fabricate passable pieces of money. But the men whose 'taste' is disclosed by the work we have just considered were swayed by an influence they could not have understood. The expectancy that controlled them they inherited. The withy-band had wrapped itself round all their conceptions." But the result was enrichment and not degradation, and the curious designs their art produced show us the only portal through which the animal form can enter into ornament, by resolving itself, namely, into the angles, curves, and scrolls of symmetrical repetition.

"Many pauses took place ere the process was completed. Now one part of the body was surrendered to the skeuomorph and anon another. Conventionalism established a temporary truce, but the war of structure against nature broke out afresh, and the grotesque appeared. We look upon the death-grasp of a writhing quadruped, the knotted convolutions of a serpent, the spectral gleam of a vanishing face. And then, when all was over, when the battle on the ornamental field was lost and won, nothing was left but a zoomorph of contrasted curves and symmetrical scrolls."

The human form is not exempt from the skeuomorphic inroad. The two men in Fig. 4, Plate VII., which is taken from an illuminated page of the Gospel of Mac Regol, at Oxford, are suffering from but a mild attack, but the men on the Pre-Norman font at Checkley, near Uttoxeter, and similar figures (Figs. 110, 111) on a cross at Ilam, five miles from Ashbourne, have all but succumbed.



THE REASONS FOR WHICH OBJECTS ARE DECORATED.

IN the Introduction I referred to what were termed certain needs which constrained man to artistic effort. These were art, information, wealth, and religion, and they will now be treated as briefly as may be, since it is impossible to deal adequately with them.

I. ART.

Aesthetics is the study and practice of art for art's sake, that is, for the pleasurable sensations which are induced by certain combinations of form, line, and colour. It does not signify for our purpose how the feeling for art has been obtained, nor is an analysis of the sensations necessary. All men have this sense, varying from a rudimentary to an exalted extent. Though it is naturally the basis of all art work, it does not follow that the æsthetic sense has been the sole cause of decorative work. Religion and the desire to convey information have both imitated and controlled pictorial and decorative art, but the artistic sense has all along exerted its influence to a greater or less extent. The artistic feeling has endeavoured to cast a glamour of beauty over the crude efforts of religion and science.

In the scheme of the life-history of pictorial or decorative designs given on p. 8, I have considered only those which have originated from various combinations of originally solitary figures. Separate portraits whether of men or

animals, either in the flat or in the round, have been omitted as they remain in the lowest place of development, though they may attain to the highest excellence of art. Those who have followed the brilliant researches in classical archaeology will appreciate what I mean by the life-history of representations. The origin, rise, glorious consummation, and decadence of Greek statuary is a striking illustration of my theme.

Figures may be grouped not only to convey a sentiment, as in a picture, but merely for decorative effect. The artist in this case usually at once adopted a conventional treatment. In some instances strict realism may be appropriate, but in the greater number of conditions it is most inappropriate.

Walls, fabrics, and platters have from time immemorial been decorated in this manner. Many books have been written illustrating this branch of art and laying down principles of design, and the reader is referred to these, as this subject does not fall within the scope of the present essay.

I would like to point out in this place that there is a very instructive field for study in the consideration of the decorative methods of various peoples. The way in which areas are decorated, the idea of symmetry, and such-like subjects; for example, the essence of Japanese decorative art is asymmetry, and the results are charming to our eyes although we have been reared amongst symmetrical designing. Symmetry may be exhibited in the equal balancing of dissimilar designs, as is commonly done by Oriental artists, or in the mechanical duplication in relation to a median line which is so dear to European decorators.

The style of the decorative art of a savage or barbaric people is a legacy and its perpetuation is usually binding, not merely by custom but more frequently by religion. When all the various factors are taken into account, one finds that the æsthetic sense of a savage artist is not so very different

after all from that of his civilised fellow-craftsman, and one can see in the disposition or the introduction of certain elements in a design, that both are actuated by the same æsthetic sense of what is suitable,—both are, in fact, artists.

In the section on *Physicomorphs* I allude to the rarity of landscape drawing among savage peoples, and give an illustration (Fig. 66) of one, from Torres Strait, which occurred casually on a bamboo pipe; there is another but poorer landscape from the same locality in the Oxford University Museum. Early attempts, such as these, at pictures are especially interesting as illustrating the working of the mind of the artists.

It is not within the scope of this book to trace the history either of pictorial art or of individual pictures. The genesis of a great picture is most interesting, and it may occasionally be traced owing to the fortunate preservation of the artist's sketches and studies. It often happens that some of the figures in the finished picture have lost the vitality which they had in the sketch stage, even such a great artist as Raphael could not always reproduce the spirit of his own work.

If the originating artist lost something out of his own handiwork, it is no wonder that a copyist should lose more, especially when the latter may not have access to the original, but base his reproductions on copies several times removed from it. A late stage of degeneration of pictorial art, through more or less incompetent copying, is seen in the cheap lithographs which occupy, without adorning, the walls of houses of the country folk, many of which, like the analogous frescoes of Pompeii, are the pictorial echoes of the works of masters of the craft.

II. INFORMATION OR COMMUNICATION.

I HAVE already referred to the difficulty of finding a term which will express all that might be dealt with in this section.

In order to convey information from one man to another, when oral or gesture language are impossible, recourse must be had to pictorial signs in some form or another.

Probably one of the earliest of this needs was that of indicating ownership, and it may be that many devices on primitive implements and utensils have this as one reason for their existence, although the nature of the ornamentation may be owing to quite a different reason.

As a matter of fact we know very little about owners'-marks, but it is possible that while an object may frequently be decorated with a clan or tribal device, the particular variety or delineation of that figure will serve to distinguish the ownership of the object.

Allied to owners'-marks are trade-marks; on this subject, too, information is lamentably deficient, but we know that these do occur amongst primitive folk (p. 48, Fig. 13).

Most savages employ a more elaborate method of conveying information, and this picture-writing, as it is called, has been of such importance in the history of the world, especially in its later developments, that it deserves a more detailed treatment.

Pictographs.

A pictograph is writing by means of a picture. It records and conveys a fact or an idea by graphic means, without the employment of words or letters. As pictography belongs to a low plane of culture, so far as the visual communication of information is concerned, the representations are generally very crude. By no means should they be regarded as typical examples of the artistic skill of the people who execute them. They are intended for picture-writing, not for pictures. An examination of pictographs shows at once that only essential or salient characters are noted, and when subjects are frequently repeated they become conventionalised, and in their later forms cannot be regarded as in any sense objective portraiture.

Nowhere in the world are pictographs so much employed as in America, and fortunately it is possible to gain precise information respecting their signification. Colonel Mallery¹ has devoted himself to an exhaustive study of North American pictography, and I cannot do better than briefly detail a few of his deductions.

"A general deduction, made after several years of study of pictographs of all kinds found among the North American Indians, is that they exhibit very little trace of mysticism or of esotericism in any form. They are objective representations, and cannot be treated as ciphers or cryptographs in any attempt at their interpretation. A knowledge of the customs, costumes, including arrangement of the hair, paint, and all tribal designations, and of their histories and traditions, is essential to the understanding of their drawings. Comparatively few of their picture signs have become merely conventional. A still smaller proportion are either symbolical or emblematic. By far the larger

¹ Garrick Mallery, "On the Pictographs of the North American Indians," *Fourth Annual Report of the Bureau of Ethnology*, 1882-83 (1886). See also *Tenth Ann. Rep.*, 1888-89 (1891).

part of them are merely mnemonic records, and are treated of in connection with material objects formerly and, perhaps, still used mnemonically.

"It is believed that the interpretation of the ancient forms is to be obtained, if at all, not by the discovery of any hermeneutic key, but by an understanding of the modern forms, some of which fortunately can be interpreted by living men; and when this is not the case the more recent forms can be made intelligible, at least in part, by thorough knowledge of the historic tribes, including their sociology, philosophy, and arts, such as is now becoming acquired, and of their sign language.

"It is not believed that any considerable information of value in an historical point of view will be obtained directly from the interpretation of the pictographs in North America. They refer generally to some insignificant fight or some season of plenty or famine.

"Ample evidence exists that many of the pictographs, both ancient and modern, are connected with the mythology and religious practices of their makers.

"Some of them were mere records of the visits of individuals to important springs or to fords on regularly established trails. In this respect there seems to have been, in the intention of the Indians, very much the same spirit as induces the civilised man to record his initials upon objects in the neighbourhood of places of general resort.

"One very marked peculiarity of the drawings of the Indians is that within each particular system, such as may be called a tribal system, of pictography, every Indian draws in precisely the same manner. The figures of a man, of a horse, and of every other object delineated, are made by every one who attempts to make any such figure with all the identity of which their mechanical skill is capable, thus showing their conception of motive to be the same" (pp. 15-17; all the quotations are from the *Fourth Ann. Rep.*).

The purposes for which pictography has been employed by the North American Indians are:—

1. *Mnemonic*.—For the remembrance of the order of songs, the figurative or representative pictures remind the singers of the order of the stanzas previously committed to memory; as well as for traditions, treaties, and the records of events. Among the most interesting of the latter are the Dakota Winter Counts. The Dakotas reckon time by winters, and apply names to them instead of numbering them from an era. Each name refers to some notable occurrence of the year to which it belongs, and ideographic records of these occurrences were formerly painted in colours on the



FIG. 112

Pictograph of a
lasso, Dakota
Winter Count,
1825-18; after
Mallery.

hides of animals. A single example will suffice, it is for the year 1812-13. "Many wild horses caught," or "catching wild-horses winter." The wild horses were first run and caught by the Dakotas. The device is a lasso. The date is of value, as showing when the herds of prairie horses, descended from those animals introduced by the Spaniards, had multiplied so as to extend into the far northern regions. The Dakotas undoubtedly learned the use of the horse, and perhaps also of the lasso, from southern tribes. . . in only two generations since

they became familiar with the horse they have become so revolutionised in their habits as to be utterly helpless, both in war and the chase, when deprived of that animal" (p. 108).

2. *Notification*.—The pictographs of this division may be grouped as follows—(1) Notice of departure, direction, etc.; (2) notice of condition, suffering, etc.; (3) warning and guidance; (4) charts of geographical features; (5) messages or communications; (6) record of expedition, and so forth.

The following (Fig. 113) is an example of a notice of departure on a hunting expedition.¹ Similar ones are made

¹ Originally published by Dr. W. J. Hoffman, *Trans. Anthrop. Soc.*, Washington, D. C., 1883, p. 134.

by the natives to inform their visitors or friends of their departure for a certain purpose. They are depicted upon strips of wood, which are placed in conspicuous places near the doors of the habitations.

1. The speaker, with the right hand indicating himself, and with the left pointing in the direction to be taken.
2. Holding a boat paddle—going by boat.
3. The right hand to the side of the head, to denote sleep, and the left elevated with one finger, to signify one—one night.
4. A circle with two marks in the middle, signifying an island with huts upon it.
5. Same as No. 1.
6. A circle to denote another island.

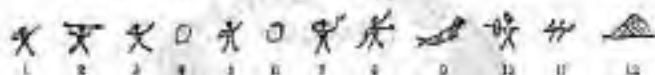


FIG. 113.—Alaskan notice of a hunt, from Mallery, after Hoffman.

7. Same as No. 3, with an additional finger elevated, signifying *two*—two nights.
8. The speaker with his harpoon, making the sign of a sea-lion with the left hand. The flat hand is held edgewise with the thumb elevated, then pushed outward from the body in a slightly downward curve.
9. A sea-lion.
10. Shooting with bow and arrow.
11. The boat with two persons in it, the paddles projecting downward.
12. The winter, a permanent habitation of the speaker.

The following is a translation of the native account:—
 "I there go that island, one sleep there; then I go another that island, there two sleeps; I catch one sea-lion, then return place mine."

" Hunters who have been unfortunate, and are suffering from hunger, scratch or draw upon a piece of wood characters similar to those figured (Fig. 114), and place the lower end of the stick in the ground on the trail where the greatest chance of its discovery occurs. The stick is inclined toward the locality of the habitation.

" 1. A horizontal line, denoting a canoe, showing the persons to be fishermen.



FIG. 114.—Pictograph of starving hunters, Alaska; after Mallery.

" 2. An individual with both arms extended, signifying *nothing*, corresponding with the gesture for negation.

" 3. A person with the right hand to the mouth, signifying *to eat*, the left hand pointing to the house occupied by the hunters.

" 4. The habitation.

" The whole signifies that there is *nothing to eat* in the house. This is used by natives of Southern Alaska."

Lean-Wolf, of the Hidatsa, who drew the picture of which Fig. 115 is a fac-simile, made a trip on foot from Fort Berthold to Fort Buford, Dakota, to steal a horse from the Dakotas encamped there. The returning horse-tracks show that he attained the object in view and that he rode home. The following explanation of characters was made to Dr. Hoffman, at Fort Berthold, in 1881:—

1. Lean-Wolf, the head only of a man to which is attached the outline of a wolf.
2. Hidatsa earth lodges, circular in form, the spots representing the pillars supporting the roof. Indian village and Fort Berthold, Dakota.
3. Human footprints; the course taken by the recorder.
4. The Government buildings at Fort Buford (square).

5. Several Hidatsa lodges (round), the occupants of which had intermarried with the Dakotas.
6. Dakota lodges.

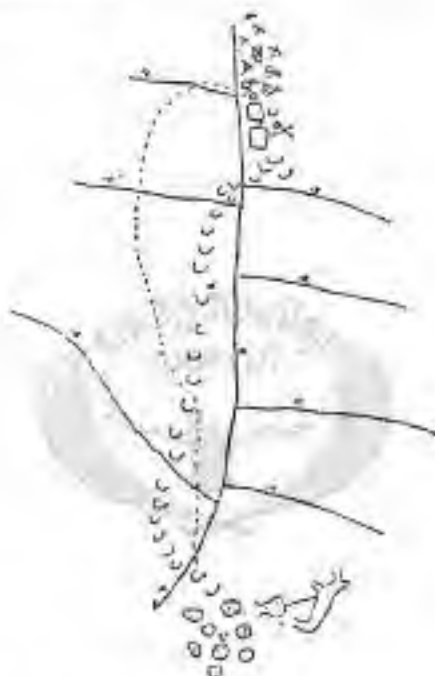


FIG. 115.—Leam-Wolf's Map, Hidatsa, after Malley.

7. A small square—a white man's house—with a cross marked upon it, to represent a Dakota lodge. This denotes that the owner, a white man, had married a Dakota woman who dwelt there.
8. Horse-tracks returning to Fort Berthold.
9. The Missouri River.

19-16. Tule Creek, Little Knife River, White Earth River, Muddy Creek, Yellowstone River, Little Missouri River, Dancing Beard Creek.

3. *Designation*.—This group embraces tribal, clan and personal names, marks, status of individual and signs of particular achievements.

The clan, or gentile, designations are totems; these are depicted in the funeral pictographs to the exclusion of the personal names, the latter are not indicative of an Indian's totem.

In No. 1 of the last figure we have the usual signature of Lean-Wolf. During his boyhood he had another name.

4. *Religious*.—Comprising mythic personages, shamanism dances and ceremonies, mortuary practices, grave posts, charms, etc.

5. *Customs, Daily Life and Habits*.—The accompanying figure is from a carving made of a piece of walrus tusk and represents incidents in the life of an Alaskan native. The special purport of some of the characters and etchings is not apparent.

1. A native with his left hand resting against a house. To the right is a "shaman stick" surmounted by the emblem of a bird, a "good spirit," in memory of some departed friend (? of his wife).

2. A reindeer.

3. One man, the recorder, shot and killed another with an arrow.

4. A trading expedition with a dog sledge.

5. Is a sail boat, although the elevated paddle signifies that that was the manner in which the voyage was best made.

6. A dog-sled with the animal hitched up for a journey. Above is the sun.

7. A sacred lodge. The four figures at the outer corners of the square represent the young men placed on guard armed with bows and arrows, to keep away the uninitiated.

Inside are the members of the band dancing; the fire-place is in the centre. The angled lines extending from the right side of the lodge to the partition line are a plan of the subterranean entrance to the lodge.

8. A pine tree, up which a porcupine is climbing.

9. A pine tree, from which a woodpecker is extracting larvae for food.

10. A bear.

11. The recorder in his boat, holding aloft his double-bladed paddle to drive fish into a net.

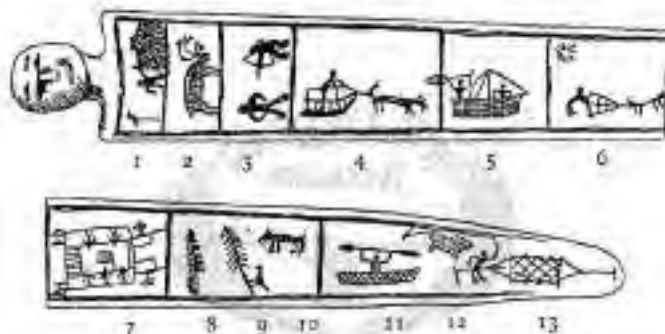


FIG. 116.—Ivory carving with records, Alaska; after Mallery.

12. An assistant fisherman driving fish into the net.

13. The net.

The figure over the man (No. 12) represents a whale, with harpoon and line attached, caught by the narrator.

6. *Historical*.—Colonel Mallery says: "It is very difficult, if not impossible, to distinguish in pictographs, or indeed orally, between historical and traditional accounts obtained from Indians. . . . The winter counts, while having their chief value as calendars, contain some material that is absolute and veritable tribal history."

7. *Biographic*.—Pictographs are very common either of a continuous account of the chief events in the life of the

subject of the sketch, or of separate accounts of some particular exploit or event in the life of the person referred to.

In this and in another memoir¹ Colonel Mallery calls attention to the fact that it is necessary to distinguish between different kinds of pictorial signs, but this becomes more difficult when the characters have become conventionalised. They may be classified under—1. Pictorial Signs; 2. Emblems; 3. Symbols.

1. The representation of any object when it is intended to express that object is a *pictorial sign*; for example, the figure of a fish in a pictograph would usually refer to fish in general or to some particular species of fish. The pictorial translation of a personal name, such as "Lean-Wolf" (Fig. 115, 1), comes under this heading.

2. Tribal signs, personal insignia, etc., are *emblems*; and these do not necessarily require any analogy between the objects representing and the objects or qualities represented, but may arise from pure accident. The representation of a totem belongs to this category, so that under certain conditions a drawing would not refer to any actual fish or that the individual was named "fish," but that he belonged to the fish clan; it was emblematic of his clan or his family group, like most of our armorial bearings. Tribal signs among savage peoples are emblems in the same way that the rose, thistle, lock, and shamrock are the emblems of the main components of the British Islands. As Mallery points out, "After a scurrilous jest the beggar's wallet became the emblem of the confederated nobles, the Gueux of the Netherlands; and a sling, in the early minority of Louis XIV., was adopted from the refrain of a song by the Frondeur opponents of Mazarin."

3. *Symbols* are less obvious and more artificial than mere signs, they are usually conventional, and are not only abstract but metaphysical, and often need explanation from

¹ Garrick Mallery, "Sign Language among North American Indians," *First Annual Report of the Bureau of Ethnology*, 1879-80 (1881).

history, religion, and customs. They do not depict but suggest objects; do not speak directly through the eye to the intelligence, but presuppose in the mind knowledge of an event or fact which the sign recalls. The symbols of the ark, dove, olive-branch, and rainbow would be wholly meaningless to people unfamiliar with the Mosiac or some similar cosmology, as would be the cross and the crescent to those ignorant of history. The last-named objects appeared in the class of emblems when used in designating the conflicting powers of Christendom and Islamism." Among the North American Indians "the pipe is generally the symbol of peace, although in certain positions and connections it sometimes signifies preparation for war, and again subsequent victory. The hatchet is a common symbol for war, and closed hands or approaching palms denote friendship. The tortoise has been clearly used as a symbol for land." Many pictorial signs can be used as emblems, and both can be converted into symbols or explained as such by perverted ingenuity. An interesting example of the last is seen in the early Christian conceit of the portraiture of a fish used for the name and title of Jesus Christ. This is based on the Greek word *ixthys*, "an acrostic composed of the initials of the several Greek words signifying that name and title. This origin being unknown to persons whose religious enthusiasm was in direct proportion to their ignorance, they expended much rhetoric to prove that there was some true symbolic relation between an actual fish and the Saviour of men. Apart from this misapplication, the fish undoubtedly became an emblem of Christ and of Christianity."¹

An interesting example of the transformation of a symbol into an emblem is found in the case of the triskele or trisketra. This is now recognised to be a variant of the tetraskelc, fylfot, gammadion, or swastika, as it is variously called. Originally this was a sun-symbol, but many other

¹ Mallery, "Sign Language," etc., (88), p. 339.

meanings were doubtless associated with it. The triskelion "first appears on the coins of Lycia, about B.C. 480; and then on those of Sicily, where it was adopted by Agathocles, B.C. 317-307, but not as a symbol of the morning, mid-day, and afternoon sun ('the Three Steps of Vishnu'), but of the 'three-sided' or rather 'three-ended' or 'three-pointed' (triquetrous) land of Trinakria, i.e., 'Three-Capes,' the ancient name of Sicily; and finally, from the seventeenth century, on the coins of the Isle of Man,"¹ where covered with chain armour, but without spurs, it was introduced by Alexander III. of Scotland in 1266, when that prince took over the island from the Norwegians; he having become familiar with the device at the English Court of Henry III. (1216-72), whose son Edmund was for a short time styled King of Sicily, and who quartered the Sicilian arms with the royal arms of England.² The triquetra is also met with in the armorial bearings of several noble families in England, Germany, Switzerland, and Poland, but now the legs are appropriately clothed in armour and spurs are added; probably these are relics of the Crusades. Truly "the Three Legs of Man" have run afar not only in historical time and geographical space, but also in the unseen world of symbolism.

In the section devoted to Religion I deal with the history and migration of the fylfot, one of the most widely distributed symbols, as this particular instance forms a good example of the method which should be adopted in studying symbols and their meaning.

Pictography is so obvious a means for conveying information that there is no difficulty in supposing it to have originated independently among different peoples. Its use is, and has been, very widely spread.

¹ J. Newton, *Athenaeum*, No. 3385, September 10, 1892, p. 353; and for further details cf. *Manx Note-Book*, January 1886.

² Sir George Birdwood, Introduction to Count Goblet d'Alviella's *The Migration of Symbols*.

Petroglyphs are known from great antiquity in Europe and Asia. They are still employed in Australia; they are found in New Zealand, but most of these, like many of those which scattered throughout the continent of Australia, are comparatively ancient. They are common in some parts of South Africa, where they are due to the artistic impulses of the Bushmen; neither the Kafirs nor the Hottentots paint human and animal forms on the rocks. As petroglyphs are much more permanent than pictographs on more perishable materials, they are more likely to be preserved from ancient times, but it is probable that the latter were actually of more frequent occurrence.

There is no single system of pictography. Everywhere a figure of a man means a man, and that of a tree stands for a tree, and to this extent pictographs can be deciphered by any one. More precise information can be gleaned when the figures are provided with some unmistakable determinative, and are in a realistic attitude. In the vast majority of cases a native interpreter is required to explain the exact significance of the figures, or of the event which they commemorate. Once explained, the representations are usually found to be sufficiently appropriate. Although the meaning of simple pictographs may be guessed at readily enough, the elucidation of complex representations is a very different matter, as there are usually some signs, symbols, or determinatives of which the significance is unknown.

In attempting to decipher pictographs, not only is it necessary to have a thorough knowledge of the people who made them, but it must be borne in mind that characters substantially the same, or "homomorphs" (to use Colonel Mallery's term) made by one set of people, have a different signification among others. Further, differing forms ("sym-morphs") for the same general conception or idea may occur. It is usually comparatively easy for any one to get a meaning out of a pictograph; but it is quite a different

matter whether that was the meaning which the inscriber intended to convey.

I have dwelt at some length on pictographs, or ideograms, as they are used to so large an extent by backward peoples to convey ideas; but this is only the threshold of a much larger and more important matter, the Art of Writing.

These early steps, as has already been mentioned, have been traversed by various peoples, but fewer have attained the next stage, while the last has proved a laborious and tedious effort. "To invent and to bring to perfection the score or so of handy symbols for the expression of spoken sounds which we call our alphabet, has proved to be the most arduous enterprise on which the human intellect has ever been engaged. Its achievement tasked the genius of the three most gifted races of the ancient world. It was begun by the Egyptians, continued by the Semites, and finally perfected by the Greeks. From certain Egyptian hieroglyphic pictures, which were in use long before the Pyramids were erected, it is possible to deduce the actual outlines of almost every letter of our modern English alphabet."¹

The stages through which alphabetic writing has passed are as follow:—

1. *Pictographs*.—Pictures or actual representations of objects.
2. *Ideograms*.—Pictorial symbols, which are used to suggest objects or abstract ideas.
3. *Phonograms*.—Graphic symbols of sounds. They have usually arisen out of conventionalised ideograms, which have been taken to represent sounds instead of things.
3. (*A.*) Verbal signs, representing entire words.
4. (*B.*) Syllabic signs which stand for the articulations of which words are composed.

¹ James Taylor, *The Alphabet, an Account of the Origin and Development of Letters*, 1883.

5. *Alphabetic Signs or Letters*, which represent the elementary sounds into which the syllable can be resolved.

1. The least advanced of men can convey information, that is, they can write by means of *Pictographs*.

2. Probably all of them also employ more or fewer symbols or *Ideograms*, such as the depicting of a turtle for "land" by the North American Indians.

The next stage is that in which from pictures which represent things or ideas were derived pictures which represent sounds or *Phonograms*.

Our children, of their own initiative, to amuse themselves, pass through the two earlier stages of writing. The stage we are now considering is a common amusement for children, in the kind of conundrum known as the *rebus*. "In the *rebus* the picture of an object is taken to denote any word or part of a word which has the same sound as the name of the thing pictured. As in the well-known *rebus* in which the sentence, 'I saw a boy swallow a gooseberry,' is represented by pictures of an eye, a saw, a boy, a swallow, a goose, and a berry. If, for instance, like the ancient Egyptians, we were to adopt a circle with a central dot as our ordinary written symbol for the sun, this would be an ideogram. But if we were to go on, and after the Egyptian or Chinese method, were to use the same symbol to express also the word 'son,' we should have a phonogram of that primitive type which has repeatedly served to bridge over the gap between picture ideograms and phonetic characters."

3. In all languages there are certain monosyllabic words which are pronounced alike, but which have different significations, for example, *stork*, *stalk* (noun and verb). In order to indicate which was intended in phonography, it would be necessary to add a determinative or explanatory ideogram. Thus, if a figure of the bird represented the first, the same figure of a bird with a flower or some leaves

by its side would indicate a stalk, and a pair of legs by the side of another bird would determinate the action of stalking. The Chinese to the present day write in this cumbersome way, as used to do the ancient Egyptians and Assyrians.

There is no need, however, to invent a *rebus* to show what one is when Egyptian hieroglyphics are full of them. I take the following from Dr. Isaac Taylor. The picture of a lute was used symbolically by the Egyptian scribes to denote "excellence." It then came to stand as a phonogram to express the word *nefer*, "good." But in the Egyptian language this sound represented two homophonic [similarly pronounced] words, *nefer*, "good," and *nefer*, "as far as." Hence we find that the character may be used as a pictorial ideogram [pictograph] to represent a lute, and as a symbolic ideogram to mean excellence; then as a phonogram for the preposition *nefer*, and lastly as a syllabic sign to denote *ne*, the first syllable of the word *nefer*.

4. The problem of phonetic denotation having thus been solved, the syllabic signs were combined so as to form compound phonograms on the principle of the *rebus*. For example, the name of lapis lazuli was *Wahseteb*. Now the word *Wahset* meant to "stop," and the syllable *teb* denoted a "pig." Hence the *rebus* "stop-pig" was invented to express graphically the name of lapis lazuli, and this is figured by the picture of a man stopping a pig by pulling at its tail.

The Japanese system of writing illustrates the later development. They learnt the art of writing from the Chinese, but as their language is polysyllabic, while the Chinese is essentially monosyllabic, "the Chinese characters which are verbal phonograms could only be used for the expression of the polysyllabic Japanese words by being treated as syllabic signs. A number of characters sufficient to constitute a syllabary having been selected from the numerous Chinese verbal phonograms, it was found that the whole apparatus of determinatives (or 'keys,' radicals,

or 'primitives,' as they are termed in describing Chinese writing) might be rejected, being no longer indispensable to the reader. By these two changes an almost incredible simplification of the Chinese writing was effected. But though syllabism is a great advance on a system of verbal phonograms, yet it is necessarily somewhat cumbersome, owing to the considerable number of characters which are required."

Although the Japanese have invented one of the best syllabaries which has ever been constructed, the development stopped short there. "The fact that during more than a thousand years it should never have occurred to a people so ingenious and inventive as the Japanese to develop their syllabary into an alphabet, may suffice to show that the discovery of the alphabetic principle of writing is not such an easy or obvious a matter as might be supposed."

5. The final step consists in employing a sign to represent a sound. It is a more refined analysis of a word, and this gives simple phonetic elements, few in number, but which can be indefinitely combined.

The ancient Egyptians curiously just stopped short of the final stage; they developed alphabetical signs more than four thousand years B.C., but failed to make independent use of them. Their innate conservatism appeared to paralyse further growth; truly the gods have not given all the gifts to any one man, for they (like Hannibal) did not know how to make use of their victory. When a word was alphabetically written a phonogram was added to explain it, and an ideogram (or pictograph) was added to explain the phonogram. The word as finally written was an accretion of various stages in its own evolution.

Those who would like to trace the processes by which one alphabet has been developed must be referred to Dr. Taylor's great work, from which I have abstracted so much.

For the sake of convenience Egyptian scribes developed

a hieratic writing from the hieroglyphics. Strangely enough this was twice accomplished, the early Hieratic was truly cursive and much bolder than the later and more delicate, though less modified Hieratic. The former was invented before the period of the Hyskos or Shepherd Kings, and the latter, or Theban Hieratic, arose in the succeeding Ramesidan dynasty.

The Semites, who dwelt in the Delta of Lower Egypt during the five or six centuries of the Hyskos dynasty, seized on the alphabetic symbols of the cursive Hieratic, which was the secular writings as opposed to the sacred hieroglyphs. Their language and mode of thought being different from that of the Egyptian scribe, and having no sacred traditions to hamper them, they were able to break away from the trammels of antiquity. They were wise enough to drop the useless lumber of the phonogram and ideogram, and so they dissected out, as it were, the alphabet from the cursive Hieratic. This was done in order to have a ready and simple method for recording business transactions. Along with their wares the Phœnicians distributed along the shores of the Mediterranean this far more valuable acquisition. The gift of the knowledge of letters with its vast potentialities more than counterbalanced the sharp practices of these keen traders.

It was reserved for yet another people, the Greeks, to perfect the alphabet they had learnt from the Phœnicians to an extent which the Semites were unable to accomplish, and this improvement in notation enabled them to register thoughts more enabling than the records of commerce. It is scarcely conceivable that Greece could have risen to her intellectual pre-eminence if she had been shackled with phonographic writing. Evolution in notation is necessary for the evolution of mental processes.

The evolution of the art of writing clearly shows that it was expedient for the utilitarian to destroy the æsthetic, for it must be admitted that the hieroglyphics of Ancient Egypt

were the most decorative of all known writing symbols. Professor Flinders Petrie, in a lecture delivered at the Royal Institute, in May 1894, stated that "the Egyptian treatment of everything was essentially decorative; the love of form and drawing was in Egypt a greater force than amongst any other ancient people. Babylon and China, from want of sufficient artistic taste, allowed their pictorial writing to sink into a mere string of debased and conventional forms; the Egyptians, on the contrary, preserve the purely pictorial and artistic character of their hieroglyphs to the end. The hieroglyphs were a decoration in themselves; their very position in the sentence was subordinated to the decorative effect; the Egyptian could not be guilty of the barbarism seen on some of the Assyrian sculpture, where inscriptions were scrawled right across the work without regard to design. So far was this idea carried that many words or ideas were represented by two distinct characters, one wide and the other narrow and deep, so that the harmony of the design should not be broken by an unsuitable element. The result was that the Egyptians were rewarded by having the most beautiful writing in the world."¹ The less the picture became like what it was intended to represent the more useful it became as a means for conveying thought. But in the new-found method of expression aesthetics has vastly gained, and from our present point of view we may regard as the final term of the series, vivid written descriptions of scenes and events or word-pictures.

¹ *Newspaper Report.*

III. WEALTH.

WHEN dealing with the decorative transformation of artificial objects I referred (p. 78) to the large axes which are made in some of the islands in the archipelagoes off the south-east peninsula of New Guinea, and I pointed out how the desire for a reputation for wealth appears to have resulted in the production of a useless article, which took a great deal of time to fabricate.

Mr. H. Balfour¹ gives a parallel example in the case of "the development of our own civic and state maces. In these the end which was originally the handle end has now become the 'clubbed' end, through the small crown, which originally embellished the handle, having gradually developed into the enormous head so characteristic of the modern ceremonial mace; the two ends have changed places, and the sometime 'business' end is now the smaller."

An analogous modification often occurs in votive objects. In prehistoric as well as in recent times objects are dedicated to certain shrines. Sometimes these may be objects in actual use, but frequently they are specially made, and in order to increase their value they are made in some more precious material or with more elaborate workmanship. For example, votive axes have the blade decorated and even often perforated, so that it comes to be an elegant fret-work axe-blade, artistic and valuable but utterly useless for material purposes. This has happened amongst many peoples and at various times.

¹ H. Balfour, *The Evolution of Decorative Art*, 1893, p. 73.

But there is also a reverse process which operates in votive offerings, which may partly be due to the idea that the deities or powers to whom the offerings are made care more for the idea of offering than for the object offered, as at a later stage it was recognised that "to obey is better than sacrifice, and to hearken than the fat of rams" (1 Samuel xv. 22). It must, however, be confessed that another consideration has probably been operative, and that is economy, and it is conceivable that this motive has led to the reason being assigned that the idea of the gift, or the essence of the gift, was all that was necessary.

It is superfluous to detail many examples, as the following will suffice to illustrate this retrograde tendency. It was formerly a widely-spread custom to sacrifice attendants for the dead. "In the seventeenth century the practice is described as prevailing in Japan, where, on the death of a nobleman, from ten to thirty of his servants put themselves to death. The Japanese form of modern survival of such funeral sacrifices is the substitute for real men and animals, images of stone, or clay, or wood, placed by the corpse.¹ The ceremonies (in China) of providing sedan-bearers and an umbrella-bearer for the dead, and sending mounted horsemen to announce beforehand his arrival to the authorities of Hades, although these bearers and messengers are only made of paper and burnt, seem to represent survivals of a more murderous reality."² The Chinese, too, on certain occasions make mock money in paper and then burn it as an offering.

Associated with wealth is the evolution of money. Money is essentially a symbol of value; coin is always of less intrinsic worth than its nominal value, and as money transactions increase the nominal value bears absolutely no relation to the real value, as in the case of paper money.

In some parts of British New Guinea we find at the

¹ E. H. Tylor, *Primitive Culture* (2nd ed.), 1873, p. 463.

² *Ibid.*, p. 464.

present time a very interesting intermediate stage between mere barter and the evolution of money.

I have elsewhere¹ pointed out that there is no money in Torres Straits; but certain articles have acquired a generally recognised exchange value. Some of the objects necessitate a considerable amount of skilled labour; others, such as certain shell ornaments, vary in value according to the size of the shell, although, of course, the labour in fabricating a small shell is very little less than that expended over a large one. I noticed that, as with our precious stones, a comparatively small increase in size greatly enhances the value. In the first case it is the labour that gives the value, in the second it is the rarity. Thus these objects cannot be regarded as money as they have an intrinsic value. Those most generally employed are the *dibidibi*, a round polished disc worn on the chest, and formed from the apex of a large cone shell (*Conus millepunctatus*); the *maiei* or *mauri*, a shell armband formed of a transverse section of the same shell; a *mai* or dugong harpoon, a long elegantly shaped instrument cut out of a tree; a canoe.

A good *maiei*, one which can be worn on the arm of a man, is a very valued possession, the exchange value is a canoe or a dugong harpoon. I gathered that ten or twelve *dibidibi* are considered of equal value to any of the above. The ornaments vary in size and finish, and the value varies correspondingly, thus no table of equable exchange can be drawn up.

A wife was formerly rated at the highest unit of exchange, her value being a canoe, or a *mai*, or a *maiei*.

Macgillivray² states that in 1849 an iron knife or a glass bottle (which, when broken into fragments form so many knives) was considered a sufficient price for a wife. Now the natives usually give trade articles to their prospective

¹ A. C. Haddon, "The Ethnography of the Western Isles of Torres Straits," *Journ. Anth. Soc.*, vii., 1890.

² *Figure of the "Australia,"* 1852.

parents-in-law. My friend Maimo, the chief of Tud, informed me that he paid for his wife, who came from the mainland of New Guinea, a ramphor-wood chest containing seven bolts (*i.e.*, pieces) of calico, one dozen shirts, one dozen singlets (jerseys), one dozen trousers, one dozen handkerchiefs, two dozen tomahawks, one pound of tobacco, one long fish spear, two fishing lines, one dozen hooks, and two pearl shells, and he finished up by saying, "By golly, he too dear!" If the above price was actually paid, there was some foundation for his exclamation. Once when he sold me something he particularly demanded a tomahawk in exchange, as he had to give one to his mother-in-law to "pay" for his last baby, and he did too. It appears that babies have to be paid for as well.

At the opposite end of British New Guinea, Sir William MacGregor informs us that at Panamot (Deboyne Island), in the Louisiades, the canoes for which this island is famous are cut out with adzes of hoop-iron, but "they sell the canoes when made at from ten to fifty stone axes. They do not use the stone axe as a tool in this part of the country, but it still represents the standard of currency in great transactions such as the purchase of a canoe, or a pig, or in obtaining a wife. The natives always carefully explain that, as concerns the wife, the stone axes are not given as a payment for her, but as a present to the father of the girl. Steel tomahawks will, however, now be accepted, at least in some cases, in payment of a canoe, and no doubt the days of the currency of the stone axe for these and all other purposes are numbered" (July 1890).¹ In Misima (St. Aignan Island) also "they have entered the iron age, and appear to have entirely given up the use of the stone axe except as a medium for purchasing wives" (October 1888).²

The evolution of the money symbol is a very interesting

¹ *Annual Report of British New Guinea, C.A.*, 1, 1892, p. 66.

² *Further Correspondence respecting New Guinea, 1890, C.* 5883, p. 251.

history, and I would refer those who would like to inquire further into it to the masterly work by Professor Ridgway.¹ In the following brief sketch of this question I draw largely from that book.

Among the Bahnars of Annam, who border on Laos, "everything," says M. Aymonier, "is by barter, hence all objects of general use have a known relationship; if we know the unit, all the rest is easy." After enumerating certain exchange values, he continues, "1 *maek* = 10 *mati*, that is to say, ten of those hoes which are manufactured by the Cedans, and which are employed by all the savages of this region as their agricultural implement. The hoe is the smallest amount used by the Bahnars. It is worth 10 centimes in European goods, and is made of iron."²

"The Chinese likewise used hoes as money; but in the course of time the hoe became a true currency, and little hoes were employed as coins in some parts of China" (*tsin*, agricultural implements).³

At Ras-el-Fyk, in Dufour, the hoe also serves as currency,⁴ and in West Africa "axes serve as currency; these are too small to be really employed as an implement, but are doubtless the survival of a period not long past when real axes served as money."⁵

At the time when the Chinese made their great invasion into South-Eastern Asia (214 B.C.), they still were employing a bronze currency under the form of knives, which were 135 millimetres (5½ ins.) in length, bearing on the blade the character *Mink*, and finished with a ring at the end of the handle for stringing them. Under the ninth dynasty (479-501 A.D.), they used knives of the same form and metal, but 180 mm. (7½ ins.) in length, furnished with a large ring at the end of the handle and inscribed with the characters

¹ W. Ridgway, *The Origin of Metallic Currency and Weight Standards*, 1872.

² *Loc. cit.*, p. 23.

³ *Loc. cit.*, p. 22.

⁴ *Loc. cit.*, p. 45.

⁵ *Loc. cit.*, p. 40.

Ty Ku-r Hoa. Next the form of the knife was modified, the handle disappeared, and the ring was attached directly to the blade; but now, as weight was regarded of importance, its thickness was increased to preserve the full amount of metal, and the ring became a flat round plate pierced with a hole for the string.¹ Later on these knives became really a conventional currency,² and for convenience the blade was got rid of, and all that was now left of the original knife was the ring in the shape of a round plate pierced with a square hole. This is a brief history of the *saïf* (more commonly known to us as *saik*), the only native coin of China, and which is found everywhere from Malaysia to Japan.³

"Among the fishermen who dwell along the shores of the Indian Ocean, from the Persian Gulf to the southern shores of Hindustan, Ceylon, and the Maldivé Islands, it would appear that the fish-hook, to them the most important of all implements, passed as currency. In the course of time it became a true money, just as did the hoe in China. It still for a time retained its ancient form, but gradually became degraded into a single piece of double wire. These *larins*, made both of silver and bronze, were in use until the beginning of the last century, and bear legends in Arabic character. Had the process of degradation gone on without check, in course of time the double wire would probably have shrunk up into a bullet-shaped mass of metal, just as the Siamese silver coins are the outcome of a process of degradation from a piece of silver wire twisted into the form of a ring and doubled up, which probably originally formed

¹ J. Silvestre, "Notes pour servir à la recherche et au classement des monnaies et des médailles de Anam et de la Cochinchine Française," *Excursions et Reconnaissances*, No. 15 (1883), p. 395.

² W. S. Arund, "The Ancient Coinage of China," *American Journ. Archaeol.*, iv, 1888, p. 284, Pls. XII, XIII.

³ H. C. Méliès, *Recherches sur les Monnaies des Indigènes de l'Archipel Indien et de la Péninsule Malaise*, 1871.

some kind of ornament. The bullet-shaped *tirol* is now struck as a coin of European form. Just as, perhaps, the silver shells of Burmah became the multiple unit of a large number of real cowries, so the fish-hook made of real silver came into use as a multiple unit, when the bronze fish-hook had already become conventionalised into a true coin.¹

"Every medium of exchange either has an actual marketable value, or represents something which either has, or formerly had, such a value, just as a five-pound note represents five sovereigns, and the piece of stamped walrus skin, formerly employed by Russians in Alaska in paying the native trappers, represented roubles or blankets. This is an interesting parallel to the ancient tradition that the Carthaginians employed leather money" (p. 47).

To employ the language of geology, we have found evidence pointing to certain general laws of stratification. In Further Asia we have found a section which presents us with an almost complete series of strata, whilst in other places where we have been only able to observe two or three layers, we have nevertheless found that certain strata are invariably found superimposed upon others just as regularly as the coal seams are found lying over the carboniferous limestone. As soon as the primitive savage has conceived the idea of obtaining some article which he desires but does not possess, by giving in exchange to its owner something which the latter desires, the principle of money has been conceived.

Shells or necklaces of shells are found everywhere to be employed in the earliest stages. When some men began to make weapons of superior material, as for instance, axes of jade instead of common stone, such weapons naturally soon became media of exchange: when the ox and the sheep, the swine and the goat are tamed, large additions are made to the circulating media of the more advanced

¹ W. Ridgway, *The Origin of Metallic Currency and Weight Standards*, 1892, p. 27.

communities; then come the metals; the older ornaments of shells and implements of stone are replaced by those of gold (and much later by silver), and by weapons of bronze as in Asia and Europe, and by those of iron in Africa.

Copper and iron circulate either in the form of implements and weapons, such as the axes of West Africa, the hoes of the early Chinese and modern Balmars, and the ancient Chinese knives, all of which remind us of the axes and halberds in Homer; or in the form of rings and bracelets, like the manillas of West Africa and the ancient Irish fibulae, or else in the form of plates or bars of metal, ready to be employed for the manufacture of such articles, as in the case of the iron bars of Laos, the iron discs of the Madis, and the brass rods of the Congo. Again, we are reminded of the mass of pig-iron which Achilles offered as a prize.

It is of the highest importance to observe that such pieces of copper and iron are not weighed, but are appraised by measurement. We shall find that it is only at a period long subsequent to the weighing of gold that the inferior metals are estimated by weight.

The custom of capturing wives, which prevails among the lowest savages, is succeeded by the custom of purchasing wives. The woman is only a chattel on the same footing as the cow or the sheep, and she is accordingly appraised in terms of the ordinary media of exchange employed in her community, whether it be in cows, horses, beads, skins, or blankets. Presently male captives are found useful both to tend flocks, and, as in the East and in the modern Soudan, to guard the harem.

With the discovery of gold, ornaments made at first out of the rough nuggets supersede other ornaments, and presently either such ornaments or portions of gold in plates or lumps are added to the list of media, and the same follows with the discovery of silver. Such ornaments or pieces of gold and silver are estimated in terms of cattle,

and the standard unit of the bars or ingots naturally is adjusted to the unit by which it is appraised. Thus we find the Homeric talent, the silver bar of Annan, the Irish *magu* all equated to the cow, and the Welsh *libra*, Anglo-Saxon *libra*, similarly equated to the slave.

With the discovery of the art of weaving, cloths of a definite size everywhere become a medium, as the silk cloth of ancient China, the woollen cloths of the old Norsemen, the *bankiyek* of the Soudan, and the blankets of North America. This fact once more recalls Homer and makes us believe that the robes and blankets and coverlets which Priam brought along with the talents of gold to be the ransom of Hector's body, all had a definite place in the Homeric monetary system.

"We have seen the Siamese piece of twisted silver wire passing into a coin of European style, and the Chinese bronze knife ending by becoming *cash*, just as the Homeric talent of gold appears, in weight at least, as the gold stater of historical times. Thus in every point the analogy between what we find in the Homeric Poems and in modern barbarous communities seems complete.

"We may therefore with some confidence assume that we are at liberty to fill up the gaps in the strata of Greek monetary history which lie between Homer and the beginning of coined money on the analogy of the corresponding strata in other regions. This assumption, resting on a broad basis of induction and confirmed by a good deal of evidence special to Greece and Italy, will be found to explain the origin, not only of weight standards in those countries, but of the types on the oldest coins, such as the cow's head of Samos, the tunny fish of Olbia and Cyzicus, the axe of Tenedos, the tortoise of Aegina, the shield of Boeotia, and the sphinx of Cyrene" (pp. 49, 50).

Professor Ridgeway's view is that while mythological and religious subjects do occur on Greek coins, it can be shown that certain coins, even in historical times, were regarded as

the representations of the objects of barter of more primitive times.

The tunny fish continually passes in vast shoals through the sea of Marmora from the Black Sea to the Mediterranean. A representation of this fish appears invariably on the electrum coins of Cyzicus. "We know that the articles which form the staple commodities of a community in the age of barter virtually form its money. In a city like Cyzicus, whose citizens depended for their wealth on their fisheries and trade, rather than on flocks and herds and agriculture, the tunny fish singly or in certain defined numbers, as by the score or hundred and the like, would naturally form a chief monetary unit, just as the stock-fish (dried cod) were employed in mediæval Iceland. Are we not then justified in considering the tunny fish, which forms the invariable adjunct of the coins of Cyzicus, as an indication that these coins superseded a primitive system in which the tunny formed a monetary unit, just as the kettle and pot countermarks on the coins of Crete point back to the days when real kettles formed the chief medium of exchange?

"But far stronger evidence is at hand to show that the tunny fish was used as a monetary unit in some parts of Hellas. The city of Olbia, which lay on the north shore of the Black Sea, was a Milesian colony, and was the chief Greek emporium in this region. There are bronze coins of this city made in the shape of fishes and inscribed *ΘΥ*, which has been identified as the abbreviation of *Θήσος*, *θύσος*. When we recall the Chinese bronze cowries, the Burmese silver shells, the silver fish-hooks of the Indian Ocean, etc., we are constrained to believe that in those coins of Olbia, shaped like a fish, we have a distinct proof of the influence on the Greek mind of the same principle which has impelled other peoples to imitate in metal the older object of barter which a metal currency is replacing. The inhabitants of Olbia were largely intermixed with the

surrounding barbarians, and may therefore have felt some difficulty in replacing their latter unit by a round piece of metal bearing merely the imprint of a fish, while the pure-blooded Greek of Cyzicus had no hesitation in mentally bridging the gulf between a real fish and a piece of metal merely stamped with a fish, and did not require the intermediate step of first shaping his metal unit into the form of a tunny.

The island of Tenedos, lying off the Troad, struck at a very early date silver coins bearing for device a double-headed axe. Pausanias, in the second century A.D., saw at Delphi axes dedicated by Periclytus of Tenedos. It is probable, according to Professor Ridgeway, that such double axes as those stamped on the coins of Tenedos formed part of the earliest Greek system of currency. The prizes offered in the funeral games of Patroclus are of course merely the usual objects of barter and currency, slavewomen, oxen, tripods, talents of gold, and the like. "But he (Achilles) set for the archers dark iron, and he set down ten axes and ten half-axes;"¹ that is, ten double and ten single-headed axes. That such axes were evidently an important article in Tenedos is proved by the dedication at Delphi, and may not the axe on their coins represent the local unit of an earlier epoch?

The "tortoise" on the coins of Aegina has been mythologised as an emblem of Aphrodite, but the connection is not very intimate. According to a fragment of Ephorus, the Aeginetans took to commerce on account of the barrenness of their island. But they must have had something to give in exchange to the people before they could have developed a carrying trade, and Professor Ridgeway suggests that the tortoise on the coins of Aegina simply indicates that the old monetary unit of that island

¹ "Ten double-headed axes he set and ten single," in the translation by E. Meyer. *The Iliad of Homer*, xxiii. 850 (Macmillan & Co.), 138.

was the shell of the turtle ("tortoise-shell"), which was considerably larger, and therefore more valuable for making bowls than that of the land or mountain tortoise. The earliest coins represent a turtle, for the feet are flippers quite distinct from the legs of the later tortoises; also the thirteen plates of the dorsal shield, or carapace, are not so distinct in the turtle as in the tortoise, and in the older coins these plates are not represented. The earliest coins, too, have the incuse on the reverse divided into eight triangular compartments, which may indicate the eight plates of the ventral shield, or plastron, of all these animals.

The same line of argument applies to the Boeotian shield, which has been confidently pronounced to be a sacred emblem, but which we must now regard as a numismatic symbol of a real shield. On the reverse of these coins the incuse forms a rude X, bounded by a circle of dots, which probably represents the back of the shield, as the frame of an ox-hide shield consists of a circular rod with two cross-bars.

"The idea of making the incuse represent the other side of the object given in relief on the obverse seems to be just the stage between a complete representation of the object, as in the sunny of Olbia, and that evinced by the early coins of Magna Græcia, on which the reverse gives in the incuse exactly the same form as that in relief on the obverse."

The silphium plant of Cyrene, which yielded a salubrious but somewhat unpleasant medicine, has also been held to have a mythological symbolism, and without any evidence it has been foisted on to the hero Aristæus, "the protector of the corn-field and the vine and all growing crops, and bees and flocks and shepherds, and the averter of the scorching blasts of the Sahara." "It seems far more reasonable to treat it on the same principle as the others just discussed. The silphium formed the most important article produced in that region, and it is perfectly in

accordance with all analogy that certain quantities of this plant, and of the juice extracted from it, should be employed as money. At the present moment tea is so employed on the borders of Tibet and China, and raw cotton in Darfur."

Professor Ridgeway argues that the same holds good for representations of cattle on coins—the image of the cow or the ox indicates that the gold piece so marked is a substitute for that animal.

These researches of Professor Ridgeway's have thrown a new light on some of the images on Greek coins. He has transferred the symbolism of this class of coinage from the domain of religion to that of merchandise—from god to mammon.¹

¹ Prof. D'Arcy W. Thompson, jun., has published a paper ("On Eld and Best in Ancient Symbolism," *Trans. Roy. Soc. Edinb.*, xxviii. pt. I, 1895, pt. 179), in which he combats Prof. Ridgeway's theory, as being foreign to all we know of ancient symbolism. "We must see fallacy in any theory which treats as necessary and primitive the civilisation of a period of exalted poetry, the offspring of ages of antecedent culture; which sees but a small advance on recent barbarism in ways of life simple in some respects, but rich in developed art and stored with refined traditions; that looks only for the ways and habits and thoughts of primitive men in races supported by a background of philosophical and scientific culture of an unfathomed, and may be unbottomable, antiquity. Behind early Hellenic civilisation was all the wisdom of Egypt and the East, and the first Greeks of whom we have knowledge looked upon the old Heaven and the old Earth not with the half-open, wondering eyes of waking intelligence, but with perceptions trained in an ancient inheritance of accumulated learning." I print this extract, as I consider that D'Arcy Thompson's reminder is needed in the present search after origins. With regard to the point at issue, it appears to me that both may be right. Some of the representations on Greek coins may have the significance which Ridgeway ascribes to them, while others may bear the interpretation given by D'Arcy Thompson, whose theory I shall refer to later.

IV. MAGIC AND RELIGION.

For the sake of simplicity, in the Introduction I included in the term Religion the relation of man to unseen powers. These have always been recognised, and man has everywhere attempted to put himself into sympathetic relation with them. It is, however, preferable to distinguish between Sympathetic Magic and Religion proper, as the former is impersonal and the latter is essentially personal in its operation.

Sympathetic magic is, so to speak, the primitive protoplasm out of which natural science has been evolved, in much the same way as, together with ancestor-worship and totemism, it lies at the base of most religious systems.

1. *Sympathetic Magic.*

As Mr. J. G. Frazer has pointed out,¹ primitive man has the germ of the modern notion of natural law, or the view of nature as a series of events occurring in an invariable order without the intervention of personal agency. This germ is involved in that sympathetic magic which plays a large part in most systems of superstition.

One of the principles of sympathetic magic, or signature lore as it is sometimes called, is that any effect may be produced by imitating it. If it is wished to kill a person,

¹ J. G. Frazer, *The Golden Bough: A Study in Comparative Religion*, 1900, p. 9.

an image of him is made and then destroyed; and it is believed that through a certain physical sympathy between the person and his image, the man feels the injuries done to the image as if they were done to his own body, and when it is destroyed he must simultaneously perish.

Sometimes the magic sympathy takes effect, not so much through an act as through a supposed resemblance of qualities. Some Bechuana warriors wear the hair of an ox among their own hair and the skin of a frog on their mantle, because a frog is slippery and the ox from which the hair has been taken has no horns and is therefore hard to catch; so the warrior who is provided with these charms believes that he will be as hard to hold as the ox and the frog.

"Thus we see," continues Mr. Frazer, "that in sympathetic magic one event is supposed to be followed necessarily and invariably by another, without the intervention of any spiritual or personal agency. This is, in fact, the modern conception of physical causation; the conception, indeed, is misapplied, but it is there none the less. Here, then, we have another mode in which primitive man seeks to bend nature to his wishes. There is, perhaps, hardly a savage who does not fancy himself possessed of this power of influencing the course of nature by sympathetic magic. . . . Of all natural phenomena there are perhaps none which civilised man feels himself more powerless to influence than the rain, the sun, and the wind. Yet all these are commonly supposed by savages to be in some degree under their control."

Magic practices are, as a rule, primarily a kind of mimetic representation combined with crude symbolism, or the latter alone may be employed, as in the previously mentioned Bechuana custom.

We may regard pictorial representation of magic as probably indicating a higher stage of culture.

Mr. H. Vaughan Stevens has recently made a number of valuable observations in the Malay Peninsula; these have been

edited by A. Grünwedel,¹ and they throw a new light on the importance of decorative art in the psychic life of savages. The Sémang tribes are negrito in origin, that is, they belong to the short, dark, frizzly-haired stock which probably were the original inhabitants of that part of the world, and are consequently a more primitive people than the Malays.

The Sémang tribes, especially the Orang Paggang of East Malacca, possess a kind of picture writing which, on the one hand, serves to record mythological representations, name-marks, etc., upon objects made of bamboo; on the other hand it forms the foundation of complicated magic patterns which these tribes are accustomed to employ as a means of protection against illnesses. But in so far as these patterns are incised in the bamboo as prescriptions for the healing herbs to be employed, apart from the protecting charm which lies directly in them, those elements which go to make them up can also be described as a kind of writing.

The magic patterns of the pure Sémang from East Malacca are found on three classes of objects—

1. The bamboo combs (*da-lig*) of the women.
2. The bamboos (*gor* and *gac*) which serve as quivers for the blow-pipe arrows and the tube of the blow-pipe. These are the protective devices of the men.
3. The bamboos called *gi*, which contain all the ordinary patterns. With the exception of a remnant these have sunk into oblivion. No example is known.

The combs are worn throughout the whole Sémang district, but on the western side of the mountain chain of the Peninsula, from Kédah to Pérak, these are used more as ornament, and the originals for the composition of the patterns are forgotten.

The patterns on the combs exhibit flowers, or the principal

¹ "Die Zaubermuster der Orang Sémang," *Zeitschr. für Ethnologie*, xlv., 1893, p. 71; "Die Zaubermuster der Orang hütan," *ibid.*, xlv., 1894, p. 121.

parts of flowers, which serve as simples against the disease. The combs are only used by women against invisible sickness, etc., such as fever; for injuries and wounds such as those caused by a falling bough in the jungle, or the bite of a centipede, other means are employed. The combs are not used for combing the hair. The women wear eight combs, sometimes even sixteen, which are placed horizontally with the teeth embedded in the hair and the handles projecting outwards; when eight are worn, two are inserted in the front, back, and sides of the head.

The choice of combs depends upon—(1) The diseases which are raging near the tribe; (2) the diseases which are most feared; and (3) the number of women there are together.

According to the Sémang, the winds bring these sicknesses with them as the punishment for some sin which Keil, the thundergod, wishes to revenge. The wind-demon, which is sent by Keil on this message, blows over the head of the person and deposits the sickness on the forehead, from whence it spreads over the body. The god Plé, however, gives to the Sémang a magical remedy which the winds dare not approach, and so the impending punishment is turned aside. If a woman is protected by the right comb and the wind blows upon her head, the demon meets the odour of the *was* and falls down to the ground. If the *wér* charm fails the *páwér* charm comes to the rescue, so that the demon cannot get any further, and recognising Plé's power, it falls down and is carried away by the wind. If the illness comes from behind it is held back by *was*, that is the representation which runs across the comb at the insertion of the teeth. The calyx of a flower is called *was*, and exactly as the flower lies embedded in its calyx, so the parts of the handle named *wér* and *páwér* reach under the *was* line, although one cannot see them, and are there just as effective as above.

When several women meet they wear different combs to

protect themselves and others from all kinds of diseases. Different *wûs* patterns are necessary, as each sickness has its own wind, and the wind does not bring any or all diseases. As a rule a *wûs* is necessary for each disease, without, however, excluding others, but sometimes it does for about six. It does not often happen that the Sëmiang curves upon a *coûb* a pattern for any other than the one object in view.

The Sëmiang women usually possess from twenty to thirty combs, and they lend them to one another. When in the huts and at night they lay them under the roof. They are buried with the owner to keep the diseases from the spirit which have been averted during life.

As to the origin of the custom, the Sëmiang unanimously declare that the patterns of the combs were the invention of the god Plê for themselves, and were not borrowed from any other folk. In former times the combs had only three teeth. The teeth are merely a means for fastening. The men wear no combs as their hair is kept short. Their magical remedies are the *gôr's* and *gôr's*. They say that in very ancient times women carried bamboo sticks on which were cut the whole seventy disease patterns. The *gi* were stuck in the girdle.

The diseases for which the combs are effective attack women only, and these, the men say, are mostly imaginary. Illnesses which attack both men and women are kept off by the quivers and blow-pipes (*sumpit*) of the men, as the women are generally not very far off from the men.

The handle of a typical comb is divided into eight transverse bands, each of which has its own name. Above the broad central band (*th-w'g*) are four narrow bands, while below it are three narrow bands. The first and second band of the upper series are called respectively *wûs* and *pa-wûs*. The uppermost line, above *wûs*, is called *l'p*, the lowest line below the eighth band (*wûs*), and immediately above the teeth, is called *moû*.



FIG. 117.—
Blossom of an
Ixora; from
Slevens.

Wili and *Pala* are the protecting figures, whose charm keeps off the diseases. *Tipi*, *Pala* and *was* are also parts of a flower, *was* is the scent, the stamens and pistil are called *Tipi*, the line in the comb above the *was* band has the same name, the lengthened tube above the green calyx is known as *Pala* and the calyx as *was*. Two jungle flowers now serve as *Pala*, one a kind of *Ixora*, but the botanical name of the other has not been identified.



FIGS. 118, 119.—Magic combs of the
Orang Sëmang; from Slevens.

In Figs. 118 and 119 we have two combs of the Orang Sëmang, which illustrate the method of decoration. They are intended for two different diseases, the nature of either of which is obscure. The pattern in the *Was*-band of Fig. 118 evidently represents the magical flower. The

was pattern in Fig. 119 is faulty, it is etched in the original comb as in the upper band of Fig. 120. Whereas the

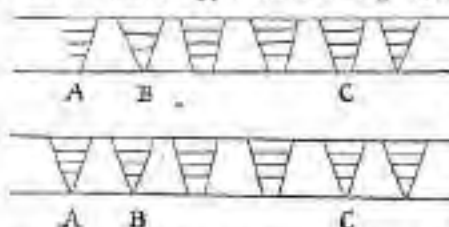


FIG. 120.—Diagram of the uppermost pattern of
Fig. 119, with rectification of that pattern; may render the
magic pattern of

elements a, b, c should have been engraved, as in lower band of Fig. 120. Such slight mistakes as these in the decor-

no avail against the appropriate disease.

If one looks through the patterns which represent *seis* and *patéer* one speedily finds that many are identical with each other, or are parts of the patterns in the fifth band (*tu-wég*) which represent the illness. The following account is given in explanation of this: as the magic patterns were made by Plé, he wished, as he settled one pattern for a definite disease, at the same time to make it known which flower blooms most freely at the time when the illness rages, and he gave to both a similar form. If *seis* and *patéer* were obliged to get exactly the same figure, in order to prevent confusion of the patterns with one another, he ordained that differentiating marks should be added on the comb.

For us, who do not see the patterns with Sémag eyes, many deviations appear in the figures. One reason for this is that the patterns of the combs are mostly incised by young men and not by the older men, as is the case with the quivers and blow-pipes. The young men, unskilled in carving, and not always perfectly acquainted with the patterns, cut the combs for their sisters and future wives. One mistake in the pattern does not necessarily do away with the efficacy of a comb, as a Panggang man once said, "It is like a gap or hole in a bird-trap: the bird can hop through it, but it is always a question whether it sees the gap."

All the figures of the combs, except the *seis*, *patéer*, and *tu-wég* must be of the very simplest kind. The rule is that they are borrowed from a *seis* or *patéer* pattern, but the special characters must be omitted. The youths who copy the combs overlook this and insert in the neighbouring bands the complete *seis* and *patéer* patterns.

The magicians engrave various devices on pieces of bamboo, and, as will be seen from the following examples, these magic staves are supposed to be effectual for a great many difficulties and adversities.

Fig. 121.—This bamboo shows as its middle figure an Argus pheasant with its two long ocellated tail-feathers.

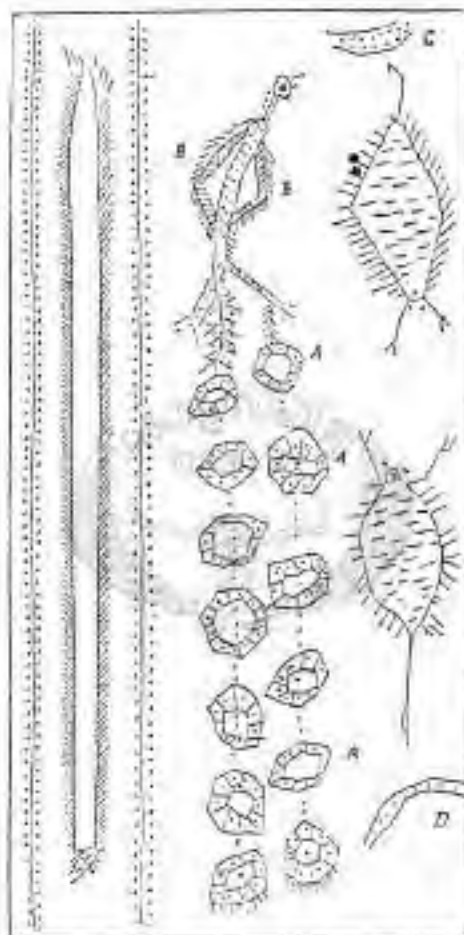


FIG. 121.—Magical pictograph, it is the Orang hutan against the stings of scorpions and centipedes; size of original 9½ inches; from Stevens.

The wheel-like patterns at *a* represent these eye-marks, the angular marks at *n* are the wings of the animal. Left of the Argus is a long, orange-coloured centipede. The head of the animal is drawn in the direction towards the tail of the Argus. The lines with little dots on each side to the right and left of the centipede are the tracks which that animal leaves on the skin of a man. Two blue scorpions are represented on the other side of the Argus. The figure at the end of their tails is a swelling in the flesh of a person who has been stung by them. The female of this kind of scorpion is more poisonous than the male, and is said to cause double stings. Therefore the marks with two rows of points at *c* denote the sting of the female, that with one row at *d* that of the male.

The significance of this bamboo is, "as the Argus pheasant feeds on centipedes and scorpions, so its help is invoked against them by striking the bamboo against the ground."

Fig. 122 represents the devices etched on a piece of

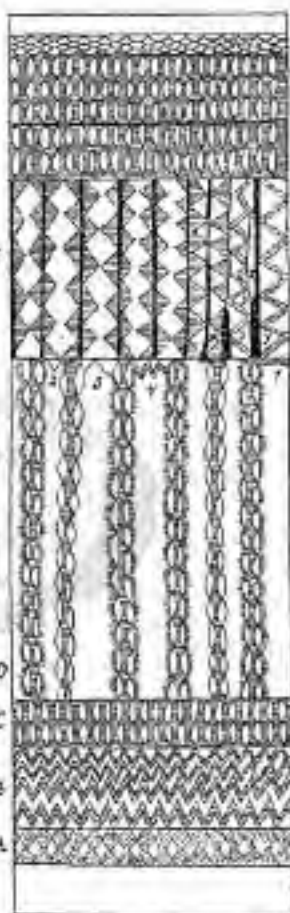


FIG. 122. — Magical device of the Orange-Bellied Argus on its skin drawn; size of original 19 inches; from Siam.

bamboo against two forms of a skin disease—the one exhibits leprous white ulcers, the other hard knots on and under the skin. The lowermost marking, *A*, when one holds the bamboo with the open end uppermost, represents the bank of a river, in which frogs have sunk holes. The dots and lines are these holes imprinted in the soft slime, some being under the water, others being above it. The zigzag lines at *B* represent frog's legs; these limbs of the animal are abbreviations for the whole animal, which is always conventionalised. Over these frogs one sees at *C* a pattern which is used to represent different things; for example: (1) an ant-hill; (2) a Hantu of an illness in the human body, whose effect is felt like the crawling and biting of ants, and indeed this Hantu lives in forsaken ant-hills; (3) the skin marked by this disease; or (4) even the seeds of a melon, cucumber, etc. Here the figure represents an ant-hill on the ground. Out of the ground there grow climbing plants (*D*), whose winding round the trees is represented by the lines forming the ovals; the little lines between these egg-shaped figures represent the body of the partially very voluminous lianas. The little lines on the outside of the twists when they are long represent thorns; but when they are mere points they indicate the tracks of insects' claws on the bark. In our picture, as the lines are midway between long streaks and dots, they represent ants in two groups, which are running up and down the lianas. Immediately under the line above *D* one sees four figures (1-4), which are respectively a bird, a butterfly, a caterpillar, and a tree-frog. The band at *E* indicates a tree. The figures are to be read off from right to left, commencing at the vertical line *x*, which represents the trunk of the tree without leaves; to the left are five similar figures, which are the fully developed leaves of the tree. To the left is a dark beam with leaf-marks on the right side only, these are the undeveloped young leaves at the top of the tree. Further to the left is a dark

beams, on each side of which are zigzags (*z z*); these are branches.

The black line to the left at *z, z*, represents the end of the lianas which are drawn in *D*; these having sprung from the ground have reached the branches of the tree.

To the left of this is the top-most part of the tree, with undeveloped leaf-shoots on the left side. The sudden dwindling of this line is to show the tapering of the tree stem towards its top.

Above this the pattern *C* is repeated, and the three rows above the line show the spots on the skin, which are supposed to look like melon seeds; the rows respectively stand for the head, body, and feet which are thus affected.

Lastly, fish-scales are drawn to represent the leprous form of the disease; these are also in three rows for the head, body, and feet. They increase in size in order to show that they will gradually spread over the whole body if not cured in some way. Just at the place where the different rows of patterns end (when one reads from left to

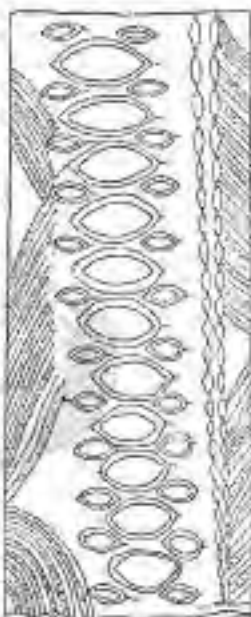


FIG. 123. — Rain-charm of the Orang Blandas; size of the original 10½ inches; from Stevens.

right) there is a group of dots on the scales, which represent the last stage of the disease; incurable holes out of which blood flows. They are supposed to be like the wounds caused by the stings of any kind of poisonous fish. These holes seldom appear on the legs.

The whole drawing is the remnant of an ancient pattern which was employed as a charm by the old magicians of the

Orang Belendas. The object of the pattern is even at the present time known to the laity, but the story is probably lost as to how the figures came to be put together in this way.

Fig. 123 is a copy of a "*top-tong*," which the man who owned it would not sell to Mr. Stevens. Its use is to produce rain when the paddy-fields are suffering from an insufficient monsoon.

The oblique lines represent the rain driven by the wind, the lines being the downpour and the dots are the rain-drops. The lines from left to right stand for the north-east, and those from right to left for the south-west monsoon. The curved lines mean a storm. The repetition of the rain-figures means "much rain."

Next to the rain on the right is a double row of tortoise-eggs (double = many), as indicative of the tortoise, which is a representative of dampness, moisture, and mud.

The middle row of figures represents young "*pyung*" fruit. The *pyung* has fruit when the rainy season begins, and loses the ripe fruit at its close. Hence it is drawn as symbolic of the rainy season. There now are, as a matter of fact, *pyung* trees that have fruit in the other months. Stevens showed some of these to the Orang Belendas, and was informed that in the time of their ancestors the *pyung* trees had ripe fruit at the rainy season. Whether that was the case in their original home, or whether another variety existed, has yet to be settled. Probably the tradition of the Orang Belendas is correct, even if it cannot be cleared up on all points.

The decoration of one bamboo is a formula to enable a man who wishes to build a house to easily find the necessary materials. Below is a band filled with cross-hatching, like trellis-work, meant for the wall of a house, and standing for the whole house; above this are several very diagrammatic representations of burnt trees which have remained after the

¹ Probably a mud-tortoise.

firing of the jungle, a forked branch of tree which is used as a prop, palm leaves for thatching, etc. The rest of the bamboo is divided into longitudinal bands, most of which look like attempts at decorative patterns, but they really signify a liana with many leaves, the frame-work of the roof of the house, a ladder, split leaves interlaced for thatching rattans, while a zigzag line means the long path which goes from side to side, and thus indicates the obstacles which befall the leaves for the thatch whilst they are being carried through the jungle.

One design is supposed to protect the harvest and the plantations round the house from injurious animals. In it is represented a very diagrammatic house. On the one side are plants with tubers growing on the sides of a hill, for the Orang Bèlanda generally clear the sides of a hill for their plantations and houses. On the other side of the house are depicted maize, the *kélâdi* (*calandiva*) with its edible tubers, three sugar-canes with the edible shoots at the roots, another plant of maize, tapioca with its edible roots, a variety of yam with its tubers, and a banana; in addition there are six immature trees, and the punctate background denotes grass. The upper part of the bamboo represents those animals which may destroy the gifts of the soil. These are a caterpillar, a rat, two iguanas (monitors or lace-lizards, which go after hens' eggs); next each lizard is a tree with leaves where they like to hide; a row of dots on each side of the tree-trunks denote the upward and downward tracks of the animals at night. There is also a tortoise with its young one, and a pair of crescentic lines indicate the pool where the reptile lives.

Another carved bamboo helps women to catch fish, and also protects them from poisonous ones.

To the uninitiated many patterns would appear to be simple decorative devices, but Mr. Stevens has found that they have definite meanings; for example, rattan may be conventionally represented by a straight or a waved line, or

by two wavy or zigzagged lines which, when applied together, form a series of ovals or diamonds. A cross-hatched band may stand for a house, the marking indicating a wall or the floor. Zigzags, like those in Fig. 122, *n*, indicate frogs' legs, these stand for frogs themselves, and these again are symbolic of water.

From the foregoing it is evident that it is only by making careful inquiries from the natives themselves that the meaning of most of the devices of savages can be elucidated. What we are apt to consider as mere decoration may have a very definite magical or symbolic significance.

Mr. Goodyear states¹ that Lieutenant Frank Cushing informed him that the patterns which the Zulus borrow from foreign ware are supposed to endow their own pottery with the virtues of the foreign material and manufacture, and that their use of borrowed patterns has this purpose.

The same author,² referring to the decorative art of Ancient Egypt, quotes as follows from Professor Maspero:—"The object of decoration was not merely to delight the eye. Applied to a piece of furniture, a coffin, a house, a temple, decoration possessed a certain magical property, of which the power or nature was determined by each word inscribed or spoken at the moment of consecration. Every object, therefore, was an amulet as well as an ornament."

The tying of magic knots is a common expedient in sorcery, as the following extracts from a short paper by Dr. March³ will prove. The malevolent tying of a knot brought mischief upon a man, to be averted only by counter-plotting and counter-knotting. Sickness was caused by the invasion of a demon, or by spells wrought by an enemy; and evil spirits had to be exorcised, and the knot of the spell-bound to be loosed.

¹ *The Architectural Record*, III., 1893, p. 139.

² Page 145.

³ H. Colley March, "Magic Knots," *Trans. Newbold L.R. and Soc. Soc.*

The magical texts, found in a bilingual form, written in the Accadian and the Assyrian tongues, furnish examples of which the following are specimens :—

May the god of herbs
Unloose the knot that has been knitted.

Take the skin of a scolding that is still engrossed,
Let the wise woman bind it to the right hand and double it
on the left.

Knit the knot seven times,
Bind the head of the sick man.

So may the guardian priest cause the lion to depart
From him, and remove the hood.

Amongst the Fins and the Norsemen, evil spells could be wrought by malevolently twisting into a magic knot the fibres of certain trees, sometimes the birch, but more often the willow; and to unloose the knot was the surest way of undoing the mischief.

In the Sigurd Saga, Sigurd boasts to Eysteinn, "On the way to Palestine I came to Apulka, but, brother, I did not see thee there. I went all the way to Jordan and swam across the river. On the bank there grows a bush of willows, and there I twisted a knot of willows which is waiting there for thee. For this knot I said thou shouldst untie, brother, or take the curse that is bound up in it."

Tying knots as a means of witchcraft is still in force in the British Islands, as may be seen in the publications of the Folk-Lore Society.¹ These practices need not necessarily be with evil intent, as the lovers' knot had for an object the firm binding of the lovers' affection to each other.

It is probable that many of the knots carved on ancient

¹ Cf. for example, *Folk-lore*, vi., 1895, pp. 154, 166; *Proc. Roy. Irish Acad.* (3), ii., 1893, p. 818.

monuments in Northern Europe have reference to this magical practice, and it is conceivable from what is known to occur elsewhere that a representation of a knot might possess all the virtue of a real knot.

But knots in Scandinavian art have also a symbolic significance and may be associated with Midgarth's Worm and the serpents in the Norse pit of perdition. On portals from Veigustad Church, in Setersdal (now in the Christiania Museum), are carved incidents from the favourite legend of Sigurd. On one of them, according to Dr. March,¹ may be seen the avaricious and ill-fated Fafni slain and utterly dismembered, passing into a maze of beautiful scroll-work. The same story is illustrated on two sides of the Halton Cross; here, however, the writhing knotted throes that elsewhere signify Fafni's death take the form of a knot, Fafni himself not being represented.

2. Totemism.

In the following brief account of totemism I borrow largely from a small but peculiarly valuable book by Dr. Frazer.² "A totem is a class of material objects which a savage regards with superstitious respect, believing that there exists between him and every member of the class an intimate and altogether special relation . . . As distinguished from a fetich, a totem is never an isolated individual, but always a class of objects, generally a species of animals or plants.

"Considered in relation to men, totems are of at least three kinds:—(1) The clan totem, common to a whole clan, and passing by inheritance from generation to genera-

¹ H. C. March, "The Pagan-Christian Overlay in the North," *Trans. Lanc. and Cheshire Ant. Soc.*, [x., 1892.

² J. G. Frazer, *Totemism*, 1887. (An expansion of the article on "Totemism" in the *Encyclopædia Britannica*, ninth edition.)

tion; (2) the sex totem, common either to all the males or to all the females of a tribe, to the exclusion in either case of the other sex; (3) the individual totem, belonging to a single individual and not passing to his descendants." The first is by far the most important, and we will confine ourselves to it alone.

"The clan totem is revered by a body of men and women who call themselves by the name of the totem, believe themselves to be of one blood, descendants of a common ancestor, and are bound together by common obligations to each other and by a common faith in the totem. Totemism is thus both a religious and a social system. In its religious aspect it consists of the relations of mutual respect and protection between a man and his totem; in its social aspect it consists of the relations of the clansmen to each other and to men of other clans. In the later history of totemism these two sides tend to part company; the social system sometimes survives the religious, or the reverse may obtain.

The members of a totem clan call themselves by the name of their totem, and commonly believe themselves to be actually descended from it. For example, I found that the following animals were totems in Torres Straits: dog, dugong, cassowary, crocodile, snake, turtle, king-fish, shark, sting-ray, giant-clam, etc. "No cassowary-man would kill a cassowary; if one was seen doing so his clansmen would 'fight him, they feel sorry. Cassowary be all same as relation, he belong same family.' The members of the cassowary clan were supposed to be especially good runners. If there was going to be a fight a cassowary man would say to himself, 'My leg is long and thin, I can run and not feel tired; my legs will go quickly, and the grass will not entangle them.' . . . If a dog-man killed a dog his clansmen would 'fight' him, but they would not do anything if an outsider killed one. A member of this clan was supposed to have great sympathy with dogs, and to understand them

better than other men. . . . No member of any clan might kill or eat the totem of that clan. This prohibition did not apply to the totem of any clan other than that to which the person belonged."¹

The reader is referred to Mr. Frazer's book for analogous beliefs and practices among various peoples. The relation between a man and his totem is one of mutual help and protection. If a man respects and cares for the totem, he expects that the totem will do the same by him.

"In order, apparently, to put himself more fully under the protection of the totem the clansman is in the habit of assimilating himself to the totem by dressing in the skin or other part of the totem animal, arranging his hair and mutilating his body so as to resemble the totem, and representing the totem on his body by cicatrices, tattooing, or paint" (Frazer, p. 26). As a matter of fact, there are comparatively few definite statements that markings on the person represent the totem of that person, but there can be little doubt that this is of wide occurrence and probably has been universal. Some of the best authenticated examples come from North America. Hints have come from Australia. I have in Torres Straits seen four old women who had their totems cut into the small of their backs; these were the dugong (2), snake, and sting-ray (2), and I was informed that the men used to scarify the shoulder or the calf of the leg with the totem device, or they carried about with them pieces of their totems or effigies of them.

The latest information on this subject is that collected by H. Vaughan Stevens.²

The Orang Sinnoi, Orang Bersisi, Orang Kenaboi, Orang Tumior declare that they are descended from one and the same folk, but that each tribe inhabited a separate island

¹ A. C. Haddon, "The Ethnography of the Western Tribe of Torres Straits," *Journ. Anth. Inst.*, xiv., 1890, p. 393.

² "Die Zaubermuster der Orang batas," Hrdt Vaughan Stevens, edited by Allen Grünwede, *Zeitschr. f. Ethnol.*, xxvi., 1894, p. 141.

before the general immigration into Malacca took place under *Berjanggai Besi*. The *Orang Tumiar* were an exception to this collective migration, as they had long before, independently, gone to Malacca.

The tradition of this tribe is very vague, but it is certain that they lived a long time separated from the other members of the group. It appears that they learnt at that time tattooing from another people, and confounded painting the face with tattooing.

For each of the three tribes, *Orang Sinnoi*, *Orang Bersai*, and *Orang Kenaboi*, there was a distinct pattern, which was identical as regards the way it was laid on and the materials employed, but which varied in form. In each of the three tribes the chief and the ordinary man and woman have the same race-marks. Only among the *Orang Sinnoi* the women and ordinary men had a particular pattern for the breast. The sorcerer, or medicine-man, in each of the three tribes wore during an act of magic a painting suitable to the occasion; when not performing, he wore his usual painting.

The following is given as the origin of the pattern of the totem and its further development into the patterns of the different families:—In the olden time, when the people of the *Orang Bèlendas* still lived under their chiefs and under-chiefs, paintings were made on the face for all assemblies, which were the old indigenous patterns for the peninsula. But as the group became broken up owing to the influx of the Malays, and intermarried with foreign and weakened folk, the patterns fell through and sub-divisions arose.

Among all the three tribes (*Sinnoi*, *Kenaboi*, and *Bersai*) there was once a powerful clan, which bore the snake totem. Owing to the many changes they had to undergo, the members of this totem separated from one another and founded new families in different parts of the peninsula. The totem varied according to the practice of the folk, each newly-developed clan modified the ground pattern, one took

a python, one a cobra, another a hamadryas, etc.; they all retained the snake and varied their pattern according to the species. Similarly arose the sub-divisions of the fish (sting-fish) and leaf clans.

These totem figures of the separated families then became used only to mark out objects appertaining to them; they were scratched on the blow-pipes and used as a face-painting when the whole family assembled together on festivals or on important debates. As the great assemblies of all the groups fell into disuse, the old stem-marks gradually became worthless, so that, to-day, but few know the appearance of the old stem-marks.

As regards the materials used, all the Orang Bèlendas agree in saying that a red earth was employed, which is not to be found on the peninsula. The so-called "anatto" (*Bixa orellana*) is used as a substitute for this earth, but it is not worth much, as it fades away in about an hour. The black colour is made with charcoal, the white with lime. The red colour is always laid on with the finger, consequently the stripe is narrower with the women than with the men.

These observations of Mr. Stevens, together with hints, rather than definite statements, which have been made from various parts of the world, suggest the conclusion that the painting, tattooing, or scarifying of designs on the body is mainly due to totemism.

A good deal of body-painting has other significances, as when it is done for religious ceremonies or for inspiring terror among the enemy when on the war-path; but it would probably be fair to assume that the origin of what may be termed domestic tattooing or scarification belongs to totemism. Here, again, is a fascinating and unworked field for research.

There is a very practical reason for the custom of marking the body with the totem. The religious aspect of totemism has been briefly described, this is the relation between a

man and his totem; but there is also the relation of the men of a totem to each other and to men of other totems, or the social aspect of totemism, which deserves a passing notice.

"All the members of a totem clan regard each other as kinsmen or brothers and sisters, and are bound to help and protect each other. The totem bond is stronger than the bond of blood or family in the modern sense. . . . To kill a fellow-clansman is a heinous offence. In Mangaia [Hervey Islands] 'such a blow was regarded as falling upon the god [totem] himself; the literal sense of "*ta atoa*" [to kill a member of the same totem clan] being god-striking or god-killing.'¹

Persons of the same totem may not marry or have sexual intercourse with each other. Amongst some peoples this rule is rigidly adhered to; the penalty for infringing this rule may be the vengeance of supernatural powers, but most frequently the clan steps in and punishes the offenders. Amongst the more primitive totemistic peoples the death penalty is usually enforced, but in any case the punishment is always severe. When other social conditions modify totemism these sexual restrictions are weakened and the punishment for offences is diminished.

There are some Australian tribes in which the members of any clan are free to marry members of any clan but their own; but more frequently an Australian tribe is divided into groups of clans, and a person can marry only into certain of these groups; an exogamous clan-group is known as a phratry. Thus a man is a possible husband to all the women of one or more phratries of his tribe, but he is brother to all the women of the remaining phratries.

"A remarkable feature of the Australian social organisation is that divisions of one tribe have their recognised equivalent in other tribes, whose languages, including the

¹ W. W. Gill, *Myths and Songs of the South Pacific*, p. 38. Quoted by Frazer, *loc. cit.*, p. 58.

names for the tribal divisions, are quite different. A native who travelled far and wide through Australia stated that 'he was furnished with temporary wives by the various tribes with whom he sojourned in his travels; that his right to these women was recognised as a matter of course; and that he could always ascertain whether they belonged to the division into which he could legally marry, though the places were one thousand miles apart, and the languages quite different.'¹

I am not aware that any one has attempted to study the totem and divisional body-marks of the Australian tribes. This can only be done through careful and laborious investigations conducted among the natives; it cannot be accomplished in the study or in museums. If Australian anthropologists do not bestir themselves without delay this information will be irrevocably lost. Every year passed makes it more difficult to do, and soon it will be too late.

The origin of tattooing or scarifying of the person receives a fresh significance from these Australian customs. The marks appear to be, not so much tribal distinctions for political purposes, but clan badges of social significance with the object of preventing persons from falling into the sin of unwitting clan incest; they are, in fact, religious symbols which make for social purity.

It is obvious that the knowledge of these symbols has to be learnt by the young people, and hence this forms an important part of the information of facts imparted during the initiation ceremonies. The main religious object of these initiation ceremonies is the assimilation of the youth with his totem, and the consequent formal adoption into the clan of that totem. Thence follows the social aspect of that adoption, and the newly-made man is instructed in his social duties; he is taught the code of sexual permissions and

¹ Fison and Haddon, *Kamilaroi and Kurnai*, p. 53; cf. Brough Smyth, *The Aborigines of Victoria*, i, p. 91, quoted by Frazer, p. 67.

prohibitions, and the knowledge of personal marks and gestures by means of which he can communicate his totem to, or to ascertain the totems of, strangers whose language he does not understand.

It is a common, possibly a universal custom, for totemistic peoples to decorate their belongings with their totems. This is well known to occur in North America. The Thlinkets paint or carve their totem on shields, helmets, canoes, blankets, household furniture, and houses. In single combats between chosen champions of different Thlinket clans, each wears a helmet representing his totem. In front of the houses of the chiefs and leading men of the Haidas are erected posts carved with the totems of the inmates. As the houses sometimes contain several families of different totems, the post often exhibits a number of totems, carved one above the other. Or these carvings one above the other represent the paternal totems in the female line, which, descent being in the female line, necessarily change from generation to generation. The totem is painted or carved on the clansman's tomb or grave-post, the figure being sometimes reversed to denote death. It is always the Indian's totem name, not his personal name, which is thus recorded. Other examples will be found in Mr. Frazer's valuable little book.

I have already (p. 17) referred to the delineation of totem animals on drums, pipes, and other objects from Torres Straits and the adjoining coast of New Guinea. Two representations of a totem are usually placed symmetrically on the object; I rather suspect that this is the rule. The cassowary is the most frequent animal on the drums, and I have reason to believe that only a certain clan, or clans, can beat the drums, in which case it is evident that the cassowary men are the chief if not the sole musicians.

When the totem representations are realistic in character there is no difficulty in recognising them; but this is by no means the usual case. Abundant evidence has been given

in this book of the degeneration of animal forms into simple decorative devices.

Many savages, however, lay no stress upon realism. A certain simple or complex mark represents a given object, it may not in the very least resemble that object any more than the written or printed name of an animal bears any relation to that animal. The mark is a *sign* for that object, and if it can be recognised, it answers its purpose. In many cases it can be shown that the mark is in reality a degraded picture of the object, in a vast number of examples we have no evidence.

On looking through collections of Australian weapons in museums, or in glancing over the illustrations to works on Australia, one is struck by the fact that a large number of objects are decorated with simple devices, and further that there is a very great deal of uniformity in the designs. Considering the size of that continent and the numerous tribes of its sparse native population, the paucity of artistic motives is very remarkable. The conclusion is pretty obvious, these designs must be representations of totems. At present we have no proof of this, nor are there sufficient data for the collation and assignation of the designs.

Dr. E. Grosse¹ is the sole anthropologist who has studied Australian art, but he has not been able to do more than enunciate general principles, owing to the absence of authoritative information from the natives. It is to be hoped that residents in Australia will learn all they can from the natives about their art before the knowledge is lost.

A slight acquaintance with decorated objects from Australia will reveal the very common occurrence of angular designs—zigzags, chevrons, diamonds, and so forth. As Dr. Grosse truly says:¹ "One is accustomed to describe these primitive ornaments as geometrical; and then it is not difficult to confound the name with the thing, so one quotes the geometric pattern occasionally as evidence for

¹ E. Grosse, *Die Anfänge der Kunst*, 1894, p. 112.

the natural predilection of the simplest people for the simplest æsthetic motive, but no proof is advanced for this peculiar predilection, because in the bulk of the philosophy of art the *a priori* method remains unshaken. All primitive ornaments are not what they seem to be. We shall see that they have at bottom nothing whatever in common with geometric figures. . . . It is certainly not always easy to recognise the original form of a primitive ornament. When one considers the zigzag or the diamond pattern of an Australian shield, it appears that our assertion is without doubt that this is destitute of animal forms, and it will appear doubly certain when we acknowledge that in most cases we cannot directly know it. It was certainly a wonder to us when we knew it. The ornament of the Australians has been by no means systematically investigated. Even in the comprehensive work of Brough Smyth it is dismissed in some very general and very superficial remarks. In fact, no one has so much as taken the pains to ask the natives the meaning of the different patterns."

Dr. Grosse then goes on to point out that "most of the ornament of the lower folk, as far as it has been investigated and as the Australian should be studied, is known to be imitations of animal or human forms. Nowhere has ornament so markedly a geometrical character as among the Brazilian tribes. Their rectilinear patterns suggest to a European, who contemplates them in a museum, anything else rather than natural forms. But Ehrenreich, who has studied them on the spot, has irrefutably demonstrated that they represent neither more nor less than animals or parts of animals." In the section which deals with zoomorphs I describe some of these remarkable patterns, and to avoid repetition I would refer the reader to that description.

We must now review all the evidence which is before us, and slender though it is, there is sufficient to justify Dr. Grosse in arriving at his general conclusions.

P. Chauncy, in Appendix A. to Brough Smyth's work

(ii. p. 251), writes: "Some of the ancients took much delight in ornamenting their shields with all sorts of figures—birds, beasts, and the inanimate works of Nature. In like manner, the natives of Western Australia—at least some tribes north from Perth—adorn their narrow shields." Brough Smyth (i. p. 294) says: "In ornamenting their rugs they copied from nature. One man told Mr. Bulmer¹ that he got his ideas from the observation of natural objects. He had copied the markings on a piece of wood made by the grub known as *Krang*; and from the scales of snakes and the markings of lizards he derived new forms. The natives never, in adorning their rugs or weapons, as far as Mr. Bulmer knows, imitate the forms of plants or trees." On p. 284 he says: "On a few of the weapons appear rude figures of men and four-footed animals. One figure of a man shown by lines on a club is in the dress and attitude of a native dancing in a corroboree. The carvings are confined to their weapons of wood. Not one of the bone implements in my possession has a single line engraved on it. There are peculiarities in the arrangement of the lines on the ornamented shields of the West Australian natives which suggest that some meaning—understood only by the warriors themselves—is conveyed by such representations. The natives of Victoria often used forms the meaning of which is discoverable now. . . . In like manner, the natives of the Upper Darling represented on their shields figures in imitation of the totems of their tribes. One in my possession has engraved on it the figure of an iguana. Collins² states, that in ornamenting their weapons and instruments, each tribe used some peculiar form by which it was known to what part of the country they belonged." In the Introduction (p. liv.) we read, "There are, amongst some tribes, conventionalised forms, evidently; and it is of the utmost

¹ The Rev. Mr. Bulmer, of Lake Tyers in Gippsland.

² *An Account of the English Colony in New South Wales*, 1803, p. 377.

importance to ascertain to what extent these are used, and by what tribes they are understood." These remarks are as applicable to the designs on weapons and other objects as to the message-sticks to which our author was then more particularly referring. After contrasting the drawings of the native human figure by the Australians with the rude drawings of men made by European children, he continues (i. p. 285): "In like manner the natives have conventional forms for trees, lakes, and streams; and in transmitting information to friends in remote tribes they use the conventional forms, but in many cases modified, and in some cases so simplified as to be in reality rather symbols than diagrams or pictures." "They often record events deemed worthy of note on their throwing-sticks" (ii. p. 259).

Brough Smyth describes the various kinds of angular patterns delineated by the natives of Australia, and concerning the figures cut on certain boomerangs and other missiles from Queensland, he says (i. p. 285), "All these forms have a meaning intelligible to the blacks of that part of the continent."

"The information which Balmer has preserved," writes Dr. Grosse, "solves the problem of Australian ornament. It does not tell us how we can interpret it, but it does tell us why we can know next to nothing about it. If the whole form of an animal is represented as an ornamental motive, it is possible to recognise it even in a diagrammatic distorted representation, for this at least, as a rule, approaches the original form; but in most Australian patterns only portions of animals occur, and the natives must frequently delineate their signs for skins; in this case it is next to impossible for a European to elucidate their signification, especially as the implicated natural forms are almost always conventionally rendered. Our explanation is, as we previously stated, not strictly proved; but the old doctrine, which takes primitive ornament for freely constructed geometrical figures, is just as little so."

Dr. Grosse maintains that his interpretation is in harmony with what is known of the nature of primitive folk, and reminds us that Bärenreiß has shown us that appearances may be deceptive. He then goes on to suggest that the decoration on a certain shield that he figures is an imitation of a snake's skin, that on another shield the representation of a bird, and the diamonds and zigzags scored on other shields as conventional representations of feathers, hairs, or scales. Those interpretations may or may not be correct, and the reader should be on his guard not to take suppositions for facts. Dr. Grosse may have more evidence than he has been able to present to his readers; but, while adopting his main thesis, I do not think that, without such evidence, we can identify the originals of the designs.

"Besides such skin-patterns," continues Dr. Grosse, "Australian ornament makes use of representations of entire men and animals. On clubs and throwing-sticks one frequently finds the engraved outlines of kangaroos, lizards, snakes, and fish, and especially frequently the figure of a emu-borreee-dancer in a characteristic attitude. The delineation of these figures is mainly crude and conventional; but in spite of this their meaning is nearly always quite intelligible."

"The Australian warrior stands in the same relation to his *koöong* [totem] animal as the European knight did towards his heraldic animal. . . and as the European warrior paints a bear or an eagle on his shield, so the Australian ornaments his with a representation of a kangaroo or a snake's skin. The knowledge that the ornaments on Australian weapons are to a large extent heraldic designs, clears up at the same time two points which we have already mentioned, but have not yet elucidated—the frequent employment of animal skin patterns, and their peculiar conventional rendering. The native whose *koöong* [totem] is perhaps a very large animal—and in this position most find themselves—manifestly can decorate his shield

with no more suitable clan-mark and no more efficacious fetich than the skin of his heraldic animal. The actual skin may or may not have been employed, and in this latter case an engraved or painted representation was substituted. These representations are scarcely ever true to nature, most of them remind one in their angular and stiff regularity more of a phylis-work than of a pelt or plumage.⁷ Dr. Grosse goes on to point out that this conventional treatment is intentional on the part of the Australian native, and is not due to lack of skill either in the delineation of animals or in wood-carving. "The fact is these skin-markings are heraldic designs; but heraldic drawing aims at truth to nature as little in Australia as in Europe. It therefore by no means happens that the actual pattern of a kangaroo or of a snake should be drawn true to nature, but it comes about that a kangaroo or snake-pattern represents a definite clan."

Although the greater part of Australian decorative art is probably totemistic in origin, there is a residue, the elucidation of which must be sought in other directions, but these do not at present concern us.

Mr. Andrew Lang has turned his attention to many anthropological subjects, and that of "the art of savages"¹ has not been passed over by him; but he has perhaps plunged into it without due consideration. Doubtless he himself would now modify the statement that "the absence of the rude imitative art of heraldry among a race which possesses all the social conditions that produce this art is a fact worth noticing, and itself proves that the native art of one of the most backward races we know is not essentially imitative." Instead of "the patterns on Australian shields and clubs, the scars which they raise on their own flesh," being "very rarely imitations of any objects in nature," we may now regard most of them as probably indicating such objects.

It is, perhaps, scarcely going too far to assert that a very

¹ A. Lang, *Custom and Myth*, 1884, p. 276.

considerable part of the decorative and glyptic art of many primitive peoples has been inspired by totemism; but it must be remembered that we have no positive evidence of totemism among a very considerable number of peoples. As animals are the most frequent totems, so zoomorphs and their derivatives are as constantly in evidence in the art of these people.

The artistic representations become modified as totemism itself becomes modified. I can only very briefly allude to some of the probable stages in the later evolution of totemism. The attribution of human qualities to the totem is the essence of totemism, and the tribal totem tends to pass into an anthropomorphic god. Mr. Frazer points out that there are often numerous sub-totems associated with each of the main totems, and suggests that there is a sort of life-history of totems, "as sub-totems they are growing; as clan totems they are grown; as sub-phratric and phratric totems they are in successive stages of decay." He also puts forward the view that these subordinate totems are regarded as incarnations of the gods or god in process of evolution, and as the latter rise more and more into human form, so the former "sink from the dignity of incarnations into the humbler character of favourites and clients; until, at a later age, the links which bound them to the god having wholly faded from memory, a generation of mythologists arises who seek to patch up the broken chain by the cheap method of symbolism. But symbolism is only the decorous though transparent veil which a refined age loves to throw over its own ignorance of the past."

So far I have mainly referred to the employment of the representation of totem animals as badges, but they are also made use of to indicate descent. Ancestor worship is an important element in the religion of many peoples, and the art which illustrates this naturally varies according to the plane of culture at which a given people have arrived. When a people are in a totemistic plane of culture their

ancestors will usually be represented as animals, the same holds good for those that have but recently emerged from this phase. This we know is the explanation of some of the well-known totem-poles and animal carvings of the natives of British Columbia, and it probably holds good for many of the intricate grotesque carvings from New Ireland.

When the totem has been evolved into an anthropomorphic god, human (*i.e.* god) forms are represented in the genealogy, as occurs on the decorated adzes of the Hervey Islands (pp. 270-274).

It is incorrect to term all worship of or attention paid to animals as "Totemism." In a great number of cases this may have been the origin of a cult, but it is a mistake to apply the lower term when the cult is sublimated into a higher form of religion. That a considerable part of the religion of ancient Greece had its origin in Totemism is generally admitted; but the animal attributes of most of their deities would not characterise the religion of the most cultured Greeks as totemistic.¹ The ox, the bear, the mouse, wild beasts and birds, and similar associates of the Olympian hierarchy, whatever they were to the ancients, are to us milestones which marked the road traversed by Hellenic religion; the Egyptian had been petrified at an earlier phase.

In the sacred bird of Western Oceania, we can probably trace the commencement of totemistic sublimation.

The cult of the frigate-bird is characteristic of Melanesia, and apparently also extends to the Pelew Islands. Dr. Codrington (*The Melanesians*, 1891, p. 145) informs us that at Florida in the Solomon Group they pray as follows to "Daula, a *lindalo* generally known and connected with

¹ Cf. A. B. Cook, "Animal Worship in the Mycenaean Age," *Journ. Hellenic Studies*, xiv., 1894, p. 81. Mr. Cook says: "On the whole, I gather that the Mycenaean worshippers were not totemists pure and simple, but that the mode of the worship points to its having been developed out of still earlier totemism" (p. 158).

the frigate-bird [a *ludala* is the ghost or spirit of a man endowed with *mawa*, that is superhuman power or influence]: "Do thou draw the canoe, that it may reach the land; speed my canoe, grandfather, that I may quickly reach the shore whither I am bound," etc. Daula is invoked to aid in fishing . . . after a good catch he is praised." On p. 180 we read, "The sacred character of the frigate-bird is certain; the figure of it, however conventional, is the most common ornament employed in the Solomon Islands, and is even cut upon the hands of the Bagotu people; the oath by its name of *daula* is solemn and binding in Florida; where Daula is a *ludala*, many and powerful to aid at sea are the ghosts which abide in these birds." Who Daula was, when he was a living man, has "passed far away from any historical remembrance" (p. 126).

In his interesting little book on *The Evolution of Decorative Art*, Mr. H. Balfour gives illustrations of conventional representations of the frigate-bird in the Solomon Islands (Figs. 11, 26). In Figs. 26, 27, 28, he shows a gradation between a "bird-like canoe charm," through a "human-headed bird canoe-charm," to a "canoe fetish," the latter having a very prognathous human head.¹ The mergence of a frigate-bird's into a human head may be due, as Mr. Balfour suggests, to one design acting upon the other, or it may be the artistic expression of the cult described by Dr. Codrington.

¹ In a letter Dr. Codrington writes: "I do not think that the very prognathous human head has anything to do with a bird. If you look at the very excellent coloured frontispiece to Brenchley's *Voyage of the Corvois*, representing a canoe on a voyage, you will see that all the men are excessively prognathous. The original is in the Mailstone Museum. I have looked at my few Solomon Island things—a common bowl supported by two human figures, which are just the same. A carved bit of soft stone and the head of a betel time stick, things just put for ornament, have the same prognathism. In fact I believe that the ordinary representation of the human head is such, the more prognathous the better it is liked."

The canoes of the Solomon Islands often have as a figure-head the carved representation of the upper part of a man who holds in his hands another human head.¹ The human figure is possibly an image of the *tindalo* in Daula. (Dr. Codrington states that a *tindalo* is always the spirit of a real deceased man.)² The carvings of birds on the bow of a canoe are practically invocations to the sacred and powerful frigate-bird.

The face or head carried in the hands of the human figure-heads ("canoe god," "charm," or "fetich") "represents that taken when the canoe was first used." A canoe of importance "required a life for its inauguration." Dr. Codrington (*loc. cit.*, p. 296) alludes to other adjuncts to the bow of canoes which give protection and success.

3. Religion.

The opening remarks in the section dealing with sympathetic magic were largely borrowed from Dr. Frazer, and I again have recourse to that author for the following sketch of the incipient religion of primitive folk.

The savage fails to recognise those limitations to his power over nature which seem so obvious to us. In a society where every man is supposed to be endowed more or less with powers which we should call supernatural, it is plain that the distinction between gods and men is somewhat blurred, or rather has scarcely emerged.

¹ "It is certain that, according to the Florida people (and their neighbours who use the word), a *tindalo* was once a man; but there are some whose names they know and of whom they know nothing as men. I am by no means of opinion that there was once a man named Daula. The name of the frigate-bird being *daula* in Ulawa is against that (k=t=d). Rather *daula* is the name of the bird, and the birds are vehicles of *tindalo*. So as every *tindalo* who takes up his abode in a shark is Bagea in Florida (a common shark being *Agea*), so every *tindalo* in a frigate-bird is Daula."—Dr. CODRINGTON in a letter to the author.

The conception of gods as supernatural beings entirely distinct from and superior to man, and wielding powers to which he possessed nothing comparable in degree and hardly even in kind, has been slowly evolved in the course of history.

At first the world is regarded as a great democracy; but with the growth of his knowledge man realises more clearly the vastness of nature and his own feebleness; this, however, enhances his conception of the power of those supernatural beings with which his imagination peoples the universe. If he feels himself to be so frail and slight, how vast and powerful must he deem the beings who control the gigantic machinery of nature.

Thus, as his old sense of equality with gods slowly vanishes, he resigns at the same time the hope of directing the course of nature by his own unaided resources, that is, by magic, and looks more and more to the gods as the sole repositories of those supernatural powers which he once claimed to share with them.

With the first advance of knowledge, therefore, prayer and sacrifice assume the leading place in religious ritual, and magic, which once ranked with them as a legitimate equal, is gradually relegated to the background, and sinks to the level of a black art. It is now regarded as an encroachment, at once vain and impious, on the domain of the gods, and as such encounters the steady opposition of the priests, whose reputation and influence gain or lose with those of their gods. Hence, when at a late period the distinction between religion and superstition has emerged, we find that sacrifice and prayer are the resource of the pious and enlightened portion of the community, while magic is the refuge of the superstitious and ignorant.

Throughout the whole of this slow evolution ornamental art has attempted to visualise the religious conceptions of the period. It would probably be more correct to regard the pictorial representations of religion as usually illustrating

a past (rather than a present aspect of belief. For a drawing, like a creed, fixes a type, and the form has a tendency to be repeated unconscious of the fact that the spirit may have burst its bonds and soared into a higher region.

Not only does the motive of religious art vary according to the stage of evolution of the religion which it illustrates, but the art itself is subject to modification as it enters into new phases of what I have termed its life-history.

Totemism is one phase of religion, but owing to its great importance in the economy of primitive peoples I have treated it in an independent section. As totemism gradually shades off into god-worship so its artistic symbolism is merged into that of divinities, but it often persists to an unexpected extent.

It is only possible for me to touch lightly on a few of the aspects of religious art from the anthropologist's point of view.

As the gods were being evolved it was very important for men to retain the remembrance of those family ties between them and mankind which were in danger of being snapped through the length to which they were drawn and the degree of attenuation which consequently ensued.

The statements of tradition as to the descent of mortals from gods are re-enforced by the representations of artists of the unlettered races, just as they are enshrined in the written cosmogonies of more cultured folk; the main difference being that any one may understand the one if he knows the written characters, whereas the other is practically a pictograph, and requires the interpretation of the natives who have the traditional knowledge of the symbols.

We are probably justified in assuming that very early in time (and it is still widely spread among backward peoples) was the custom of carving or painting the pedigree of the

man from the god—of the human from the divine. As the god is lost down the ages in the totem so too his eikon is merged into the resemblance of some animal-form. In the intermediary stage we have those monstrous forms which the enlightened pagans endeavoured to rationalise and even to spiritualise. "Yet half a beast is the great god Pan."

The beautiful wood-carving formerly executed by the natives of the Hervey Group in the South Pacific affords an excellent example of the relation of religion to decorative art.

The Rev. Dr. W. Wyatt Gill states that a significance is "invariably attached to ancient Polynesian carving," and he and a few other missionaries have given suggestive hints, but without reference to the actual designs.

Dr. H. Stolpe, of Stockholm, was the first ethnographer to study Polynesian art from a scientific point of view, and his paper¹ on Evolution in the Ornamental Art of Savages is a model of this particular kind of research. He asserts "That the carved ornament in Polynesia *always* had a meaning. . . . Polynesians cling tenaciously to ancient customs, though often they are no longer capable of accounting for their original meaning. . . . If one asks the reason of a device or a custom, one usually gets no satisfactory information. . . . Should any one, therefore, to-day, ask a native of these islands whether the ornamentation here delineated has any significance, and the reply should be 'no,' I could not recognise in it any decisive evidence. Our previous investigations suffice of themselves to prove that the forms of development of the old primitive images, highly conventionalised, *must*

¹ H. Stolpe, *Ursprungsformen und Naturfaktoren Ornamentik*, Umeå, 1890. Translated into English by Mrs. March, "Evolution in the Ornamental Art of Savage People," *Trans. Ethnol. Soc. and Soc. Sci.*, 1892; and into German, *Mittheil. Anth. Gesell.*, Wien, 1892, xlii. p. 43.

have a symbolic significance. They symbolise, they stand in place of the primitive image. They are to be considered as a sort of cryptograph. By means of perpetual reiteration of certain ornamental elements, they suggest the divinity to whose service the decorated implement was in some way dedicated.¹ A dozen years ago Dr. Stolpe stated that the linear ornaments on the carved Manganian adzes were for the most part to be regarded as transformed figures of human beings, or especially as divine beings. (Fig. 124.)



FIG. 124.—Stretching-cleft of a drum from Mangania, in the Berlin Museum; from March, after Stolpe. Two-thirds natural size.

Mr. C. H. Read, of the British Museum, independently¹ arrived at a similar conclusion to Dr. Stolpe's, and Dr. March² has carried the argument a step further. Dr. Stolpe proved that a design generally known as the K pattern, but which it is better to call the *like-like* pattern, sometimes interrupted, but generally continuous, is in reality a string of human figures, the two horizontal zigzags being limbs, and the vertical bars that join them being the headless bodies. (Fig. 125, A.)

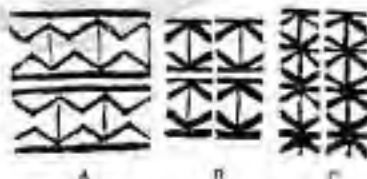


FIG. 125.—Rubbings from the handles of symbolic adzes from the Hervey Islands. A, Free Library Museum, Belfast; B, C, Belfast Nat. Hist. Mus. One-third natural size.

These figures, which

¹ C. H. Read, "On the Origin and Sacred Character of certain Ornaments of the S.E. Pacific," *Journ. Anth. Inst.*, xxi., 1891, p. 139.

² H. Colley March, "Polynesian Ornament & Mythography; or a Symbolism of Origin and Descent," *Journ. Anth. Inst.*, xxii., 1892, p. 397.

almost cover the handle of a Mangaiian paddle or adze, are obviously related to the female forms that are carved on the terminal of its shaft (Figs. 127, 128), and are morphologically derived from them by a process of evolution.

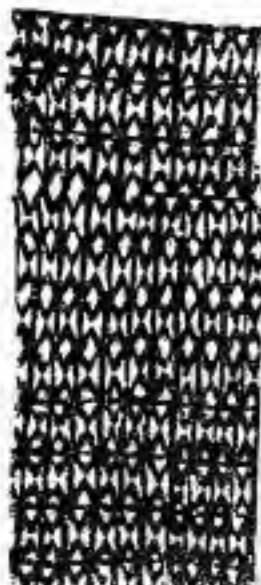


FIG. 126.—Riddling of part of the decoration of a Mangaiian symbolic paddle, Norwich Museum. Natural size.

The headless figures are quite recognisable in Fig. 125, A, but the fore-arms and shanks of each of them are absent, their places being taken by the upper arms and thighs of the contiguous figures. In *c* the serial individuals are separated by narrow vertical clefts; the latter persist in *c*, but the two boundary lines between the rows of figures are fused into a single line.

In Fig. 126 we have a large area (the blade of a paddle) divided into a number of parallel lines between which are diamonds, which may or may not be connected by horizontal lines. A careful inspection will show that the vertical lines are continuous body-lines; the horizontal lines are the same as those in Fig. 125, A, but the two lines are fused into one; the zigzags are clearly limbs. The absence of the horizontal lines simplifies the pattern, and so each diamond consists in its upper part of the legs, and in its lower part of the arms of human figures whose bodies are represented by the vertical lines.

The pattern in the lower half of Fig. 127 can be derived

from the last by the introduction of an intermediate series of vertical lines.

Curvilinear patterns, as in the lower part of Fig. 128, are common on objects from these islands; they are evidently derived from the thighs of serial human forms, as in Fig. 127, and Plate VI., Fig. 13.

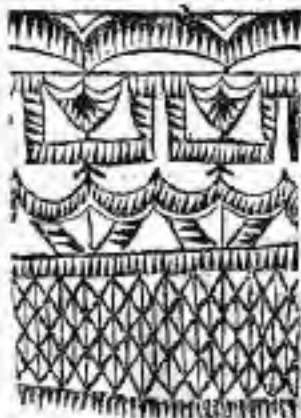


FIG. 127.—Rubbing of part of the carving of the handle of a symbolic paddle from the Hervey Islands, in the Natural History Museum, Belfast. One-half natural size.

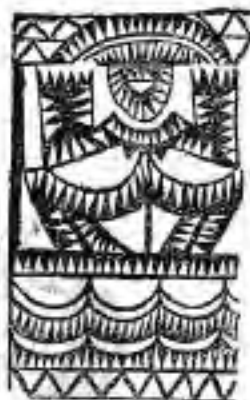


FIG. 128.—Rubbing of "part of the terminal of a paddle-shaped implement in the Vienna Museum"; from March, after Stolpe. Two-thirds natural size.

"It is abundantly certain," adds Dr. March, "that the forms that crown the shaft are those of women, for they are invariably distinguished by pendant-pointed breasts. The solitary exception that Dr. Stolpe has been able to find is one in appearance only, for in his Fig. 23 the breasts are really fused into a single cone, exactly as are the legs in his Fig. 24" (p. 322).

Dr. March's contribution is that these carved shafts of sacred paddles and adzes were pedigree-sticks. Descent is traced through the male line as a rule among the

Polynesians, but it is certain that some tribes traced their descent through the female line. Dr. Gill states that this was in some places simply a matter of arrangement. Dr. Gill tells us that the designs on these shafts were called "*tiki-tiki-tangata*," *tangata* means a man, or in this combination connotes human, for in a Polynesian word compounded of two nouns, that which comes last has a secondary, explanatory, or adjectival force. *Tiki* was the first man, and when he died, ruled the entrance of the under-world. The name signifies a "fetched" soul; the spirit of a dead man the frequentative or plural *tiki-tiki* must mean spirits in succession, or "ancestors." "The conclusion now drawn is that *tiki-tiki-tangata* were the multitudinous human links between the divine ancestor and the chief of the living tribe. But to what ancestry did these pedigrees of female lineage assert a claim? From what goddess was it the pride of Mangaians to be descended, unless from the mother, the wife and the daughter-wife of Rongo—from Tu-metua, Taka, and Tavake.

"In Mangaia all the gods were called the children of Vatea, and of these Tane was one. His name indicates the generative principle in Nature. In Mangaia he was especially the drum-god and the axe-god; he presided over the erotic dance as well as over the war-dances. Gill observes² that '*Tane mata ariki*,' Tane with the royal face, was enshrined in a sacred triple axe,¹ which symbolised the three priestly families on the island of Mangaia. This axe was buried in a cave, and has disappeared. The K pattern which covers the shafts of the sacred Mangaian axe,¹ is an assertion of a Tane pedigree, the *tiki-tiki-tangata* of the clan. 'Awake Tane!' was the invocation,³ 'Awake unnumbered progeny of Tane!'" (March, p. 331).

¹ Probably an *axe*, not an *axe*.

² W. Wyatt Gill, *Journal from the Pacific*, 1885, p. 224.

³ W. Ellis, *Polynesian Researches*, 1840, i. p. 143.

4. *Religious Symbolism.*

The study of religious symbols¹ is not only a very extensive and extremely attractive undertaking, but it is one of peculiar difficulty, for with it is combined, not a danger, but a certainty of falling into errors. There is hardly a subject upon which such diverse views can be proposed and even maintained with a fair amount of presumptive evidence.

The danger of making mistakes is, however, considerably lessened if a scientific method of study is adopted, and if speculation is reduced to a minimum. No better example of the method of such a study is to be found than in Count Goblet d'Alviella's book on *The Migration of Symbols*.² It is upon this valuable book that I have largely drawn in compiling the following account.

The meaning of the term Symbol, like the objects we connote by it, has undergone a transformation from a concrete reality to an abstraction. Originally applied amongst the Greeks to the two halves of the tablet they divided between themselves as a pledge of hospitality, in the manner of our contract form, detached along a line of perforations from the counterfoil record, it was gradually extended to the engraved shells by which those initiated in the mysteries made themselves known to each other, and even to the more or less esoteric formulas and sacramental rites that may be said to have constituted the visible bond of their fellowship. Then the meaning became amplified, and "the term came to gradually mean everything that, whether by general agreement or by analogy, conventionally represented something or somebody."³

I have previously (p. 212) given Colonel Garriek Mallory's definition of the word, which sufficiently indicates the meaning generally applied to it.

A pictorial symbol has the following life-history:—

¹ Cf. pp. 119, 122, 213.

² *The Migration of Symbols*, 1894.

³ *Ibid.*, cit., p. 1.

First, it is simply a representation of an object or a phenomenon, that is, a pictograph. Thus the zigzag was the mark or sign of lightning.

Secondly, "the sign of the concrete grew to be the symbol of the abstract. The zigzag of lightning, for example, became the emblem of power, as in the thunderbolts grasped by Jupiter; or it stood alone for the supreme God; and thus the sign developed into the ideograph."¹

Thirdly, retrogression set in when new religions and new ideas had sapped the vitality of the old conceptions, and the ideograph came to have no more than a mystical meaning. A religious or sacred savour, so to speak, still clung about it, but it was not a living force within it; the difference is as great as between the dried petals of a rose and the blooming flower itself. "The zigzag, for instance, was no longer used as a symbol of the deity, but was applied auspiciously, or as we should say, for luck."¹

The last stage is reached when a sign ceases to have even a mystical or auspicious significance, and is applied to an object as a merely ornamental device.

"By symbolism," writes Count Goblet d'Alviella, "the simplest, the commonest objects are transformed, idealised, and acquire a new and, so to say, an illimitable value. In the Eleusinian mysteries, the author of *Philosophumena* relates that, at the initiation to the higher degree, "there was exhibited as the great, the admirable, the most perfect object of mystic contemplation, an ear of corn that had been reaped in silence; and two crossed lines suffice to recall to millions of Christians the redemption of the world by the voluntary sacrifice of a god."

As that author points out, "We live in the midst of symbolic representations, from the ceremonies celebrating a birth to the funeral emblems adorning the tomb; from the shaking of hands all round of a morning to the applause with

¹ H. Colley March, "The Fylfot and the Futhorc Tia," *Trans. Lancashire and Cheshire Ant. Soc.*, 1886.

which we gratify the actor, or lecturer, of the evening. We write as we speak in symbols.

"It is sentiment, and above all, religious sentiment, that resorts largely to symbolism; and in order to place itself in more intimate communication with the being, or abstraction, it desires to approach. To that end men are everywhere seen either choosing natural or artificial objects to remind them of the Great Hidden One, or themselves imitating in a systematic manner the acts and deeds they attribute to Him—which is a way of participating in His life." The symbols with which we will here occupy ourselves are not those of acts or rites, but those of objects or emblems.

In all but the last stages of its career a symbol is a living sign, now this vitality is very real, and by virtue of it, straggled modifications take place.

For example, when a nation that employed a particular symbol came into contact with another nation that had a somewhat similar symbol, the two symbols, if quite alike, were indistinguishable, and one passed for the other; but if there were slight differences between the symbols a process of amalgamation took place, and they approximated more and more towards one another. In either case the meanings of both would doubtless commingle, and a more energetic vitality would ensue from the cross-fertilisation.

St. Anthony's cross, T (*croix patente*, "gibbet-cross"), is found, with almost the same symbolic signification, in Palestine, in Gaul, and in ancient Germany, in the Christian Calacombs, and amongst the ancient inhabitants of Central America.

Among the Phœnicians and kindred peoples this cross was an alphabetical sign, *Am*, and it was also used separately as a symbol. From a passage in Ezekiel¹ we learn that it was accounted a sign of preservation, and was marked upon

¹ Ezekiel ix. 4-6.

the forehead, like its corresponding Indian symbol.¹ The symbolic signification of the *law* is explained by its resemblance to the Key of Life, or *crux ansata* of Egypt, so widely diffused throughout all Western Asia.

"This *law* was unquestionably the emblem of life, and, therefore, of the greatest virtue. M. Letronne, in his researches on the Christian monuments of Egypt, has shown in the most conclusive manner that the first Christians of that country adopted this sign, possibly to establish that Christ was pre-eminently the source of life, or as a prophetic sign. All the gods of the ancient Egyptian mythology bore in their hand the sign of Christianity, the monogram of Christ; they were, according to the first Christians of Egypt, supposed to announce the coming of Jesus."²

The Double Hammer of the Celtic Tarann and of the Teutonic and Scandinavian Thor is a symbol of the lightning. "Thor was the sun-god proper; god of the sun in its active aspect; the thunder-god likewise, and thus the wielder of the hammer or ase (named Mjólnir, 'the crusher') representative of the thunderbolt, rendered in the form T. Thor was also lord of the Under-World, and guardian against the monsters that infested its precincts; he was likewise a protector against sickness, and was much worshipped by the franklin and peasant classes."³

"To this day a representation of the hammer of the God of Thunder may be found on the barns and stable-doors of some German villages. It is stated that in the northern, midland, and eastern counties of this country—wherever, in fact, the Teutonic element has made its strongest imprint—some old church bells still bear the same sign as a charm against the tempest.

"As applied to Thor, this tree-shaped cross symbol

¹ Schliemann, *Ilios*, p. 358.

² G. Ferrero, *Les Lois Psychologiques du Symbolisme*, 1895, p. 142.

³ The Earl of Southesk, *Origins of Pictish Symbolism*, 1893, p. 12.

sustains his double quality as the fiery Cleaver of the Clouds, who even as such represents the principle of fertility and the Sanctifier of the fruitful union of hearts.¹¹

Karl Blind has also drawn attention to a mediæval German church legend which affords a good example of the persistence of pagan ideas and of the pagan-christian overlap. "Thus Trauenlob makes the Virgin Mary say of God the Father—'The Smith from the Upper-Land (Heaven) threw his hammer into my lap (*schloß*).'"¹²


Amongst the early Christians it was a form sometimes given to the Cross of Christ, itself called the Tree of Life; but if they made of it a symbol of life, it was spiritual life that it typified to them; and if they sometimes gave it the form of the *patibulum* (gallows), it was because such was the instrument employed among the Romans in the punishment by crucifixion.

In Central America, where, according to M. Albert Réville, the Cross was surnamed the Tree of Plenty, it assumed also the form of the *tau*. This pre-Columbian American Cross, T, was a symbol of fertility because it represented the rain-god; it is, in fact, an abbreviated rain-shower (as will be seen on reference to Figs. 62-64). Similarly the four-rayed cross represented the four quarters whence comes the rain, or rather the four main winds which bring rain, and it thus became the symbol of the Tlaloc, god of rain and waters, fertiliser of earth and lord of paradise, and lastly, of the mythical personage known by the name of Quetzacoatl. From North to South America the Latin cross symbolises "the Father of the four winds" (Argentine Republic), "the old man in the sun who rules the winds" (Blackfoot Indians), or similar personages. But all crosses are not the four quarters of the wind, as will be seen on reference to Figs. 100 D, E, 102 A. For an account

¹¹ Karl Blind, "Discovery of Odinic Songs in Shetland," *Nineties Century*, June 1879, pp. 1097, 1098.

¹² Karl Blind, "Troy found again," *Antiquary*, 1884, p. 200.

of the American cross, Colonel Mallory should be consulted, *Tenth Ann. Rep.*, p. 724.

Mr. Basil, in the same number of the *Indian Antiquary*, which contains Mr. Thomas's remarks on the Svastika (March 1880), has shown that in Chinese  is the symbol for an enclosed space of earth, and that the simple cross + occurs as a sign for earth in certain ideographic groups.¹

The four-rayed cross, separate or inscribed within a circle, is a very common symbol of the sun in prehistoric Europe.

As different waves of culture drifted across Europe, as new religions permeated the mass of the people, the stream-borne symbols found physical and spiritual analogues among the indigenous symbolism, and union naturally took place. In some cases, at all events, the cross-fertilisation, as I have termed it, resulted in a higher or more spiritual meaning animating the old symbols; thus the symbol of the Avenger, the crushing Hammer of God, became that of the God-Redeemer of the world.

When symbols become merely the dry-bones of defunct religions they may retain a certain magical quality, but then they pass out of religion and enter the domain of magic, where in fulness of time they may be born anew and start a fresh career as the symbols of modern science.

Besides this natural approximation of analogous symbols and symbolism, there is a more conscious and complex amalgamation, a heteromorphism. As Count Goblet d'Alviella says,² "At other times the symbolic syncretism is intentional and premeditated; whether it be in the desire to unite for the sake of greater efficacy, the attributes of several divinities in a single figure, as is shown in certain pantheistic figures of Gnostic origin; or a wish to state, by the fusion of symbols, the unity of the gods and the identity of creeds, as in the mystic monogram wherein the

¹ Max Müller in Schliemann, *Ilios*, 1880, Eng. edn., p. 349.

² *Loc. cit.*, p. 264.

Brahmaists of contemporary India have testified to their religious eclecticism by interweaving the *Om* of the Hindus with the Trident, the Crescent, and the Cross.

"Sometimes, too, the sacerdotal interest must have tended towards accentuating the analogies rather than the dissimilarities of symbols, in order to assist the absorption or unification of the doctrines which they represented. Finally, we must take into consideration the popular tendency towards syncretism, which, when not held in check by a rigorous orthodoxy, acts upon symbols, as well as upon creeds, by introducing into the new form of worship the images consecrated by a long veneration. Or else it is the innovators themselves who take advantage of symbolism in order to disguise, through borrowing from antique forms, the newness of their doctrine and, if need be, to transform into allies the emblems or traditions which they are unable to boldly extirpate.

"Need I recall to mind Constantine choosing as a standard that *labarum* which might be claimed both by the religion of Christ and the worship of the sun? The Abbé Ansalet has shown, firstly, that heathen nations used as religious emblems Greek, Latin, Maltese, *pattées*, *gammales*, *potences*, *ansles*, *trifolées*, and other crosses; and, secondly, that the Christian Church has always accepted these different forms of the cross as the representation of its own symbol.

"Buddhism was even less scrupulous. In some of its sanctuaries it did not hesitate to preserve the images of the worship paid by the natives of India to the sun, to fire, or to serpents, whilst ascribing these rites to its own traditions. The Solar Wheel thus became easily the Wheel of the Law; the Cosmic Tree represented the Tree of Knowledge, under which Sakya Muni attained the perfect illumination; the seven-headed serpent Naga was transformed into the guardian of the impression left by the Feet of Vishnu, itself to be attributed henceforth to Buddha, and so on."

The learned author from whom I have borrowed so much gives numerous examples of this process of the transference and amalgamation of symbols, and I must refer the reader for these details to the book itself.

A. The Meaning and Distribution of the Fylfot.

The fylfot, or "fully- or many-footed" cross, is the Anglo-Saxon name for that form of cross whose extremities are bent back at right angles (Fig. 130). It is otherwise known as the "gammadion," "tetraskelē," "croix gammée," "croix cramponnée," not to mention various other names, and in India "svastika"; but when the feet are turned to the left it is called "sauvastika"; both these words have much the same meaning, and signify "it is well." At the present day in Asia, this "mystical mark made on persons or things to denote good-luck" (as Monier Williams describes it in his Sanscrit dictionary) is clearly in the third stage of its life-history, and its meaning must have been introduced after its primary significance was lost.

At the risk of being somewhat tedious I will give a brief account of the distribution of this ancient symbol, than which there are very few others so widely distributed.

Dr. Schliemann found it represented exceeding numerously on objects (Fig. 130, A, E) from the "second" or "burnt city" of the mound at Hissarlik.

In Greece, as in Cyprus and at Rhodes, it first appears on pottery with painted "geometrical" ornamentation (Fig. 130, F), that is in the second period of Greek ceramics. Later it is found on the vases, with decorations taken from living objects (Fig. G) which appear to coincide with the development of Phœnician influences on the shores of Greece. Lastly, it became a favourite symbol on coins not only of Greece proper and the Archipelago, but also of Macedon, Thrace, Crete (Fig. 130, M), Lycia (Fig. 130, I), and Paphlagonia (Fig. 130, H).

From Corinth, where it figures amongst the most ancient mint marks, it passed to Syracuse under Timoleon, to be afterwards spread abroad on the coins of Sicily and of Magna Græcia.

In Northern Italy it was known even before the advent of the Etruscans, for it has been met with on pottery dating from the terramara civilisation. It appears also on the roof of some of those ossuaries in the form of a hut (Pl. I., Fig. c), which reproduce on a small scale the wicker huts of the people of that epoch. In the Villanova period it adorns vases with geometrical decoration found at Carr, Chiusi, Albano, and at Cumæ. Finally, it appears in Roman mosaics.



FIG. 129. — Hut-shaped ossuary; L. Taylor, *Origin of the Aryan*, p. 176.

It is singular that at Rome itself it has not been met with, so Count Goblet d'Alviella informs us, on any monument prior to the third, or perhaps the fourth century of our era. About that period the Christians of the Catacombs had no hesitation in including it amongst their representations of the Cross of Christ, and they used it to ornament priestly garments. At Milan it forms a row of curved crosses round the pulpit of St. Ambrose.

It was widely distributed throughout the provinces of the Roman Empire (Fig. 130, a, r), especially among the Celts, from the Danubian countries to the West of Ireland (Fig. 130, k, v); but in many cases it is difficult to decide whether it is connected with imported civilisation or with indigenous tradition.

In England it not unfrequently occurs on Roman votive altars. In Ireland, however, and in Scotland, the fylfot seems to have marked Christian sepulchres. For example, a fylfot occurs on either side of an arrow on an ogham



FIG. 132.—Various forms of the Fylfot or Swastika. A. Wheel from Hieraculi (1887), 7 m., third city, The Burnt City or Ilion; B. Do. (1881), 3½ m., fifth city; C. Do. (1890), 4 m., fifth city; D. Do. (1873); E. Detail from wheel (1893), 5 m., fourth city; F. Locus derivative on a large amphora, with "geometric" decoration, Cyprus; G. Sotus goose and hats design on a Rhodian vase, from Salzman, *Alcropsis de Canire*; H. Coin from Selge, Pamphylia; I. Spindles on Lycian coins; J. Triskelion on a Celtiberian coin;

stone (Fig. 130, w) in an abandoned graveyard at Aglish, County Kerry, which is believed to belong to the sixth century.

In Pagan Scandinavia it occurs with other symbols (Fig. 130, x), but it there ended by combining with, doubtless (as Count Goblet d'Alviella points out) under the influence of Christianity, the Latin Cross. It ornaments early Danish baptismal fonts, and according to Mr. J. A. Hjaltein, it "was still used a few years since as a magic sign, but with an obscured or corrupted meaning," in Iceland. It arrived in that island in the ninth century, A.D.¹

"Amongst the Slavs and Finns it has not yet been found save in a sporadic state, and about the period of their conversion to Christianity only. We may remark, by the way, that it is very difficult to determine the age and nationality of the terra-cotta or bronze objects on which it has been observed in countries of mixed or superposed races, such as Hungary, Poland, Lithuania, and Bohemia.

¹ Karl Blind, "Discovery of Odinic Songs in Shetland," *Nineteenth Century*, June 1879, p. 1068.

-
1. On a silver bowl, Etruria; also on Chinese ware; w. Coin from Cosesus, Crete; n. Ancient Indian coin; o. On coin from Ujjain, Central India; v. Footprints of Buddha (so-called), Amaravati Tope, India; x. Tibetan symbol; z. Roman altar at High Rochester, dedicated to Minerva by Lucius Coellius Optatus; t. Roman altar at High Rochester, dedicated to the standards of the British of the Varduli by Titus Lælius Valsinanus; u. Celtic-Roman altar at Eildonwald, dedicated to Jupiter Optimus Maximus (JOM), apparently by Dacians garrisoned in Ambilaganno; the four-rayed wheels were solar symbols among the Gauls; w. Ogham stone, Aglish, County Kerry; x. Ancient Scandinavian symbols; v. Legend on church bell, Hatherage, Derbyshire, 1617. A-v, u. H. Schliemann, *Notes*; t, o. Goodyear, *Grammar of the Latin*; w, l, o, x, R. P. Greg, *Archæologia*, xlviii., 1885; i, x, n, s, R. Count Goblet d'Alviella, *The Allegation of Symbols*; s, t, o, w, Y. H. Colley March, *Trans. Lanc. and Cheshire Ant. Soc.*, 1886. For further details the reader is referred to these authors.

"In the Caucasus, M. Chantre has met with it on ear-drops, ornamental plates, sword-hilts, and other objects found in burial-places dating back to the bronze period and the first iron age.

"Amongst the Persians its presence has been pointed out on some Arsacian and Sassanian coins only.

"The Phœnicians do not seem to have known, or, at least, to have used it, except on some of the coins which they struck in Sicily in imitation of Greek pieces.

"It is not met with either in Egypt, in Assyria, or in Chaldaea."¹

The svastika is of common occurrence in India, and is employed alike by Hindus and Buddhists. It was used for ear-marking cattle, appears on the oldest known Indian coin (Fig. 130, N), on which are other interesting symbols, and occurs frequently at the beginning and the end of the most ancient Buddhist inscriptions; similarly it initials the legend SCA. MA. KIA. Q.P.N. at Appleby, in Lincolnshire; and at Hathersage, Derbyshire, a fylfot occurs on a church bell in the initial G of the legend Gloria in Excelsis Deo, 1617. (Fig. 130, X.) The svastika represents, according to Buddhist tradition, the first of the sixty-five marks which distinguished the Master's feet, and the sauvastika is the fourth and the third, a kind of labyrinth which is akin to the latter. It is inscribed thrice on each sole and on each digit of the famous sculptured footprints of Gautama at Amarāvati. (Fig. 130, Y.)

"Even at the present day, according to Mr. Taylor, the Hindus, at the time of the new year, paint a svastika in red at the commencement of their account books, and in their weddings and other ceremonies they sketch it in flour on the floors of their houses. It also figures at the end of manuscripts of a recent period—at least under a form which, according to M. Kern, is a development of the tetraskèle"² (*i.e.*, a variety with rounded angles).

¹ *Goldet d'Alcala, loc. cit.*, p. 42.

² *Loc. cit.*, p. 42.

The Buddhist women of Tibet ornament their skirts with it, and it is placed on the breast of the dead. A Tibetan form is seen in Fig. 130, 8.

The Buddhists introduced it into China (Fig. 130, 1) and Japan, where it adorns vases, caskets, and the representations of divinities; it is even figured upon the breasts of certain statues of Buddha. According to M. G. Dumoutier, it is nothing else than the ancient Chinese character *che*, which implies the idea of perfection, of excellence, and would seem to signify the renewal and the endless duration of life. This suggests that the symbol was brought by the Chinese across Asia in their wandering from the West to their present home; but against this view must be put the fact of its absence in Chaldea and Assyria; and we know it has been introduced by the Buddhist missionaries. In Japan, according to M. de Milloué, it represents the number 10,000, which symbolises that which is infinite, perfect, excellent, and is employed as a sign of felicity.

Schliemann¹ also records the fylfot in Africa, on bronzes brought from Coomassie by the English Ashantee expedition in 1874. It is known from South America, on a calabash from the Lengua tribe; in North America, on pottery from the mounds; and from Yucatan, on Zuni pottery, as also on the rattles made from a gourd which the Pueblos Indians use in their religious dances. I have heard that bronze representations of the fylfot have been obtained from excavations in Ohio, the details of which will shortly be published.

There can be no doubt that the fylfot throughout Eur-Asia had a symbolic significance, which in many places it still retains. Its longevity is due to this cause alone; occasionally, when it was copied by peoples who did not understand or appreciate its symbolism, it degenerated into a mere ornamental device.

Although all phases of symbolic meaning are interesting,

¹ *Ilios*, 1880, Eng. edn., p. 353.

I must restrict myself to origins and to a few of the later developments of this particular symbol.

The interpretations of the fylfot have been particularly varied, and these have been further complicated by this sign having been confounded with the *crux nasuta* of the Egyptians, the *law* of the Phœnicians, the *vajra* of India, the Hammer of Thor, or the Arrow of Perkun. All these have a clearly defined force and meaning, and even if the fylfot "ever replaced one of them—as in the catacombs it sometimes takes the place of the Cross of Christ—it only did so as a substitute, as the symbol of a symbol."¹

Some archaeologists have ascribed a phallic import to the fylfot, others recognise in it the symbol of the female sex; "but it may very well have furnished a symbol of fecundity, as elsewhere a common symbol of prosperity and of salvation, without therefore being necessarily a phallic sign."² These are probably secondary meanings superadded to a primitive and less abstract conception.

It has been held to indicate water, storms, lightning, fire, or even the Indian fire-drill, the "mystic double arani," mentioned in one of the Vedic hymns to Agni, the fire-god. These views have been combated by Greg,³ Colley March,⁴ and Goblet d'Alviella.⁵ Mr. Greg contends that the fylfot is a symbol of the air or sky, or rather of the god who rules the phenomena of the atmosphere, by whatever name men may call him. Dr. March's theory is that it symbolises axial rotation, and not merely gyratory motion; in fact, the axis of the heavens, the celestial pole, round which revolve all the stars of the firmament once in twenty-four hours. This appearance of rotation is especially impressive in the Great Bear, the largest and brightest of the Northern

¹ Goblet d'Alviella, *loc. cit.*, p. 45.

² *Loc. cit.*, p. 45.

³ R. P. Greg, "The Fylfot and the Swastika," *Archæologia*, 1885, p. 203.

⁴ H. Colley March, "The Fylfot and the Futhorc Tîr," *Trans. Lond. and Camb. Ant. Soc.*, 1886.

⁵ *Loc. cit.*, pp. 44 et seq.

constellations. . . . About four thousand years ago, the apparent pivot of rotation was not where it is now, but occupied a point at a *Draconis* much nearer to the Great Bear, whose rapid circular sweep must then have been far more striking than it is at present. In addition to the name *Ursa Major*, the Latins called this constellation *Septentriones*, 'the seven ploughing oxen' that dragged the stars round the pole, and the Greeks called it *Ἰλιον*, from its vast spiral movement."¹

There is no need to follow Dr. March in his explanation, and we must now turn to the view which has been supported by the greatest number of investigators, who "have succeeded, by their studies of Hindu, Greek, Celtic, and ancient German monuments, in establishing the fact that the gammadion has been, among all these nations, a symbolic representation of the sun or of a solar god." Count Goblet d'Alviella reinforces this theory by the following considerations:—

1. *The form of the fylfot*.—"To be convinced that the branches of the fylfot are rays in motion it is only necessary to cast one's eyes on the manner in which, at all times, the idea of solar movement has been graphically expressed. Thus on a whorl from Troy, crooked rays, turned towards the right, alternate with straight and undulating rays, all of which proceed from the same disc (Fig. 130, K).

2. *The triskele, formed by the same process as the tetra-skels, was an undeniable representation of the solar movement*.—On coins from Asia Minor the triskele is frequently represented as three legs, and on Celtiberian coins (Fig. 130, K) the face of the sun appears between the legs. On the coins of

¹ We read in the fifth book of the *Odyssey* (v. 270) how Odysseus "sate and cunningly guided the craft with the helm, nor did sleep fall upon his eyelids, as he viewed the Pleiads and Boötes, that setteth late, and the Bear, which they likewise call the Wain, which seemeth ever in one place, and keepeth watch upon Orion, and alone hath no part in the baths of Ocean."

Aspendus in Pamphylia the three legs are combined with animal representations of the sun, the eagle, the wild boar, and the lion; and on certain coins of Syracuse the triskele permutes with the solar disc above the quadriga and the winged horse. In various places transition occurs between the tetraskеле and triskele (Fig. 130, 1). I have already (p. 213) referred to the ultimate fate of the triskele.

3. *The images oftenest associated with the fylfot are representations of the sun and the solar divinities.*—The fylfot and the solar disc are, in a way, counterparts, not only amongst the Greeks, the Romans, and the Celts, but also with the Hindus, the Chinese, and the Japanese. The two are often combined into one figure, and the rays have been converted into horses' heads, as on Gallo-Belgic coins, or into cocks' heads and lions' heads which take the place of the rays of the triskele on Lycian coins. Professor Goodyear points out that the fylfot is associated on Cyprian and Rhodian pottery with the goose (Fig. 130, 6), deer, antelope, ibex, ram, horse, lion, etc. All of these are solar animals. It is associated with the lotus (Fig. 130, 7), which is also a solar symbol.

4. *In certain symbolic combinations the fylfot alternates with the representation of the sun.*—Among the Jains of modern India, a considerable Hindoo sect, the sun appears to be represented by the svastika, and this symbol and the solar disc constantly replace each other on the ancient coins of Ujjain in Central India (Fig. 130, 8), and Andhra in the Deccan. Another proof of the equivalence between the fylfot and the sun, or, at least, the light of the sun, is found amongst the coins of the ancient city of Mesembria in Thrace. Professor Percy Gardner states, "Mesembria, as it stands, is simply the Greek word for 'noon' or mid-day (*μεσημβρία*); and there can be no doubt that the Greek inhabitants would suppose their city to be the place of noon; and among the coins of Mesembria occurs ΜΕΣΗΜΕΡΑ. Five-rayed and three-rayed (triskele) sun symbols were

associated with Apollo on coins of Megara, now Mescimbrìa was founded by a colony of Megarians.

Sometimes three solar discs or three lyllots, or combinations of both, occur (Figs. 130, B, C), and in these Count Goblet d'Alviella sees a symbolic representation of the three diurnal positions of the sun, and suggests that when four symbols occur crosswise, as frequently happens (Fig. 130, D), they "relate to four different positions of the luminary, which would, perhaps, suggest no longer its daily course, but its annual revolution marked by the solstices and equinoxes."¹

¹ The importance of astronomical lore in the cults of ancient civilisations is being more forcibly brought home to us as the remains of antiquity are being more critically and sympathetically investigated. Professor D'Arcy W. Thompson, Jura., has recently published a suggestive paper ("On Bird and Beast in Ancient Symbolism," *Trans. Roy. Soc., Edin.*, xxxviii., Pt. 1, 1895, p. 179) in which he suggests that many of the Greek representations of animals on monument or coin indicate not the creatures themselves but their stellar namesakes. M. J. Svoronos ("Sur la signification des types monétaires des anciens," *Bull. Correspondance Hellénique*, 1894) had simultaneously and independently arrived at a similar conclusion, but D'Arcy Thompson carries the argument a step further, and attempts to show that the associated emblems correspond to the positions relative to one another of the heavenly bodies, in some cases to the configuration of the sky at critical periods of the year, or at the festival seasons of the cities to which the coins belong.

"The stellar symbolism that I here advocate is, I maintain, a different thing from the sun-myths, dawn-myths, and so forth, which are now to a large extent deservedly repudiated. We cannot ascribe to the civilised nations of antiquity the puerile conceptions of nature that are congruent with a stage of awakening intelligence and with the crude results of untrained observation. Rather are we dealing with the elaborated gain of ages of scientific knowledge, with the thoughts of a people whose very temples were oriented to particular stars, or to critical points in the journey of the sun; whose representations of Art, on frieze and pediment, in tragedy and epic, were governed by what would at first appear to be a tyrannical convention, which convention, however, so far from hampering their genius, seems, under the influence of a wholesome restraint, to have moulded their art into more beautiful, more poetic, and more satisfied forms. . . . The dominant

The fylfot would seem to occasionally replace the moon. On coins of Croesus, in Crete (Fig. 130, M), the Lunar Crescent takes the place of the solar disc in the centre of the fylfot; in such instances it may have been applied to the revolutions or even the phases of the moon.

Various suggestions have been made with regard to the reversed fylfot or sauvastika, but it is still uncertain whether this is of primary (Max Müller, Birdwood, Colley March) or secondary importance (Greg, d'Alviella).¹

The last theory of the origin of the fylfot that I need mention is that propounded by Professor Goodyear² in the following words:—"There is no proposition in archæology which can be so easily demonstrated as the assertion that the swastika is originally a fragment of the Egyptian meander, provided Greek geometric vases are called in evidence." Professor A. S. Murray long since suggested that the "crosses which Dr. Schliemann calls *swastikas*, but which, in fact, appear to be only the simplest form or element of the meander pattern."³ Sir G. Birdwood says:

¹ P. Gaidner, "Ares as a Sun-god," *Naturalistic Chronicle*, xx., N.S., 1880, p. 59.

² *The Grammar of the Lotus*, p. 352.

³ "On the Pottery of Cyprus," Appendix to General L. P. J. Conolly's *Cyprus*, 1877, p. 410.

poise-hand, whose domain was knowledge, holding the keys of treasure, learning opened the lock with chary hand, and veiled plain speech in grimatic allegory. In such allegory Egyptian priests spoke to Greek travellers, who came to them as Dervish-pilgrims or Wand-while Students. . . . At Olympia, in the beginning of each Leap-year cycle, the noblest youth of Greece raced, round the symbolic pillars, their horses emblematic of the Horses of the Sun; thereby glorifying a God whom they thus ignorantly worshipped. Even so, we read in the Second Book of Kings [xvi. 16; xxi. 3, 5; xxiii. 5] how their Phœnician cousins worshipped with like ceremony the same God. And all the while, in the evening and the morning, priests and walewale watched, measured, and compared the rising and setting of sun and stars, in temples that were astronomical observatories, to the glory of a religion whose mystery was astronomical science."

"I believe the Buddhist swastika to be the origin of the key-pattern ornament of Chinese decorative art."¹ Professor Goodyear makes him say that of Greek decorative art as well.

It is a pity that Mr. Goodyear has pledged himself so fully as in the statement just quoted, as it is apt to make critics more captious as to his main thesis. If the fylfot is a detached intersection of the meander pattern, why did not the Egyptians hit on it? Granting that the meander may have had an indirect origin from a natural object in the Mediterranean countries, there is no proof that any religious or magical meaning was attached to it. The manner in which the fylfot was employed proves that it certainly had a symbolic signification. The strongest argument adduced by Professor Goodyear is in the case of some "geometrically" decorated Greek vases, in which between solar geese and other symbols occurs a small panel, which is variously decorated with a fylfot, or an element or varietal detail of the meander pattern.² But this, after all, may prove to be nothing more than that the Greeks noticed that the fylfot occurred in certain varieties of the meander pattern which had been arrived at from quite a different source. This occurrence of the fylfot in these patterns was quite accidental; it would be better to say that a fylfot design could be picked out from these patterns rather than to suggest that it was inherent in them. Granting the sacred associations of the fylfot, the fact that it could be separated from a pattern which itself may have had a recognised association with the symbolic lotus would probably appeal to a symbol-loving people. If they recognised that the fylfot on the one hand, and the lotus on the other, were sun-symbols, the isolation of the associate of a sun-symbol into another sun-symbol would be a pleasing exercise of ingenuity. I do not pretend to say that this has occurred,

¹ *The Industrial Arts of India*, 1880, I. p. 107.

² *Ibid.*, p. 353.

but it is to me quite a possible alternative. The sequence which Professor Goodyear seeks to establish appears to me to be nothing more than the birth of an analogy.

Before a judgment upon the Chinese meander pattern can be pronounced it would be necessary to make a detailed study of that pattern on objects from that part of the world, and I have not access to the requisite data.

We now come to the interesting question of the birth-place of this important symbol.

It was long ago remarked that the fylfot is almost exclusively an Aryan symbol. It is completely absent among the Egyptians, the Chaldeans, the Assyrians, and even the Phœnicians, although these middle-men traded useful objects and sacred symbols indiscriminately. The Semites did not employ it.

Although widely spread and venerated among the Thracians (Fig. 130, 2), the Chinese (Fig. 130, 1), and the Japanese, it can be proved that these Mongolian peoples have adopted it along with Buddhism from India.

As a recognised religious symbol it is unknown among all the other peoples of the globe.

The conclusion is evident that the fylfot was a symbol before the swarming-off of the Aryan hordes. There seems little doubt that it was originally an emblem of the sun. It may, in certain combinations, have come to symbolise the apparent daily movement of the sun, and perhaps also the annual change of seasons. Some see in it the symbol of a sun-god, others believe it to be the god of the sky, or air, who in the course of time was variously known as Indra, Zeus, Jupiter, Thor, etc. Lastly, it has been promoted to signify "the emblem of the divinity who comprehended all the gods, or, again, of the omnipotent God of the universe." This latter is certainly not a primitive conception, and we have no evidence that this meaning was ever read into the symbol.

Count Goblet d'Alviella points out that in Europe the

geometric style of ornamentation embraces two periods, that of painted and that of incised decoration. "Now in this latter period, which is everywhere the most ancient, the gammadion is only found on the whorls of Hissarlik and the pottery of the Terramare. We have, therefore, two early homes of our symbol, one on the shores of the Hellespont, the other in the north of Italy.

"Was it propagated from one country to another by the usual medium of commerce? It must be admitted that at this period the relations between the Troad and the basin of the Po were very doubtful. Etruria certainly underwent Asiatic influences; but whether the legendary migration of Tyrrhenius and of his Lydians be admitted or not, this influence was only felt at a period subsequent to the 'palafittes' [pile dwellings] of *Emilia*, if not to the Necropolis of Villanova.

"There remains, therefore, the supposition that the gammadion might have been introduced into the two countries by the same nation.

"We know the Trojans came originally from Thrace. There is, again, a very plausible tradition to the effect that the ancestors, or predecessors, of the Etruscans, and, in general, the earliest known inhabitants of northern Italy, entered the peninsula from the north or north-east, after leaving the valley of the Danube. It is, therefore, in this latter region that we must look for the first home of the gammadion. It must be remarked that when, later on, the coinage reproduces the types and symbols of the local religions, the countries nearest the Danube, such as Macedonia and Thrace, are amongst those whose coins frequently exhibit the gammadion, the *triskele*, and the *triskele*. Besides, it is especially at Athens that it is found on the pottery of Greece proper, and we know that Attica is supposed to have been primitively colonised by the Thracians. 'The nations who had invaded the Balkan peninsula and colonised Thrace,' writes M. Maspero,

to the svastika of India. There can be no doubt that the fylfot and the svastika are genetically allied, but it is not at present very easy to demonstrate all the links of the chain. Here again I quote from Count Goblet d'Alviella.

"The svastika does not appear on the coins struck in Bactriana, or in India, by Alexander and his Indo-Greek successors. Even amongst the Indo-Scythians, whose coinage copies the Greek types, it is only visible on barbarous imitations of the coins of Basu Deva. On the other hand, as we have shown, it adorns the coins of Krandā and the most ancient monetary ingots of India. Moreover, Panina, who already makes mention of the svastika, is sometimes considered to have lived in the middle of the fourth century B.C. It might therefore be possible that the Hindus had known the svastika before feeling in their arts, and even in their symbolism, the influence of the Greek invasion.

"Yet, for the best of reasons, it is neither the Chaldeans, the Assyrians, the Phœnicians, nor even the Egyptians, who can have imported the gammadion to Hindustan.

"There only remain, then, the Persians, whose influence on the nascent arts of India was certainly felt before Alexander. But in Persia itself the gammadion only appears as an exception on a few rare coins approaching our era.

"Perhaps we would do well to look towards the Caucasus, where the antique ornaments with gammadions, collected by M. Chantre, lead us back to a civilisation closely enough allied, by its industrial and decorative types, to that of Mycenæ.

"Until new discoveries permit us to decide the question, this gap in the genealogy of the svastika will be equally embarrassing for those who would like to make the gammadion the common property of the Aryan race, for it remains to be explained why it is wanting amongst the ancient Persians. It is right, too, to call attention to its absence

on the most ancient pottery of Greece and the Archipelago, where it only appears with geometric decoration.

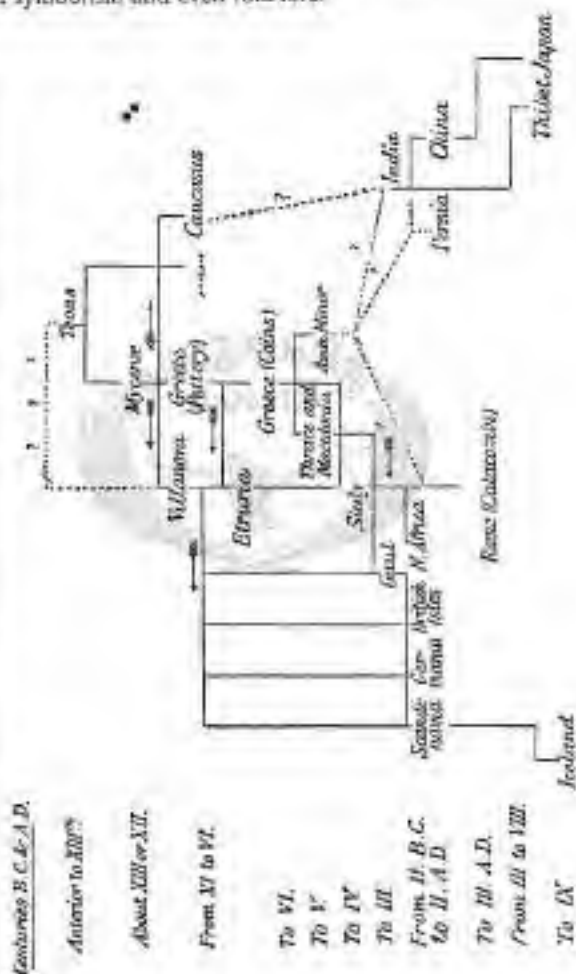
"If the gammadion is found amongst none of the nations composing the Egypto-Semitic group; if, amongst the Aryans of Persia, it never played but a secondary and obliterated part, might it not be because the art and symbolism of these different nations possess other figures which discharge a similar function, whether as a phylactery, or else as an astronomical, or a divine symbol? The real talismanic cross of the countries stretching from Persia to Lybia is the *crux ansata*, the key of life of the Egyptian monuments. As for their principal symbol of the sun in motion, is it not the Winged Globe? There would seem to be between these figures and the gammadion, I will not say a natural antipathy, but a repetition of the same idea. Where the gammadion predominates—that is to say, in the whole Aryan world, except Persia—the Winged Globe and the *crux ansata* have never succeeded in establishing themselves in good earnest. Even in India, granting that these two last figures really crossed the Indus with the Greek, or the Iranian symbolism, they are only met within an altered form, or with a new meaning.

"In brief, the ancient world might be divided into two zones, characterised, one by the presence of the gammadion, the other by that of the Winged Globe as well as of the *crux ansata*; and these two provinces barely penetrate one another at a few points of their frontier, in Cyprus, at Rhodes, in Asia Minor, and in Lybia. The former belongs to Greek civilisation, the latter to Egypto-Babylonian culture.

"As for India, everything, so far, tends to show that the *svastika* was introduced into that country from Greece, the Caucasus, or Asia Minor, by ways which we do not yet know. However that may be, it is owing to its adoption by the Buddhists of India that the gammadion still prevails amongst a great part of the Mongolian races, whilst, with the exception of a few isolated and insignificant cases which

still survive amongst the actual populations of Hindustan, and, perhaps, of Iceland, it has completely disappeared from Aryan symbolism and even folk-lore.⁶

TABLE ILLUSTRATING THE MIGRATIONS OF THE FYLFOT (AFTER GOSSET D'ARVILLE.)



B. *The Psychology of Symbolism.*

Signor G. Ferrero¹ has investigated the psychological laws of symbolism, using that term in its widest aspect. After giving a sketch of the history of the Fylfot, which is largely borrowed from that by Count Goblet d'Alviella, he proceeds to give its psychological interpretation in the following words (p. 148):—

"I believe that this symbol of the motion of the sun became transformed into a mystic symbol, precisely because it was a metaphorical symbol. The signification of a pictograph symbol can not be forgotten, for the sensation of the symbol directly recalls the image or the idea of the object; there are not in that case intermediate states of consciousness which can be eliminated. But when it concerns a metaphorical symbol, these intermediate states of consciousness exist, for the symbol must be interpreted, especially if a very imperfect and rude delineation is in question, whose relation to the object represented is of the slightest. The figure of a tree directly recalls to me the idea or image of the tree; but a circle drawn with three or four legs does not directly suggest to me in itself the precise idea of the motion of the sun; there is at least the possibility of different interpretations, and at all events there must be an original and independent act of interpretation. The significance of the symbol, finally, can only be known if one undertakes an investigation of induction and interpretation, or if one associates with an inspection of the symbol the remembrance of an explanation which has been given, or of an interpretation which we had formerly discovered for ourselves.

"Now this state of consciousness, which serves for the interpretation of the symbol, would have been necessary if the symbol of the cross had ministered to the needs of existence,

¹ Guillaume Ferrero, *Les Lois Psychologiques du Symbolisme*, 1895. (Translated from the Italian.) I am indebted to my friend Havelock Ellis for the reference to and loan of this book.

to commerce or politics, for example; but as it was a religious symbol whose use did not vary according to the truth and the exactness of its interpretation, it is evident that this state of consciousness would become useless in the long run, and the brain would relieve itself of it in a short time. The *croix gammée* (ylfot) was, like genuflexions and the other mimic symbols of ceremonial, a symbol employed in relation with the divinity; accordingly, the same cause which rendered useless in the ceremonial the state of consciousness, which we have called γ ,¹ has rendered useless the state of consciousness which could interpret the solar signification of the cross. It was, in short, a religious symbol employed in relation to God; rightly or wrongly interpreted as it may be, prayer and other propitiations tended to the same result; the state of consciousness which served for its interpretation was then not necessary, and the brain little by little relieved itself from it. This state of consciousness being eliminated, it was forgotten that the sign of the cross represented the sun, because this was a metaphorical symbol too vague to directly recall the idea of solar movement.

"When the state of consciousness which served for the interpretation of the design was gradually eliminated, all the religious sentiments which had the sun and its cult for their object were addressed to the cross; that is why it has become the object of so profound a veneration, without any one knowing its signification or origin; the cross reaps for its profit the inheritance of the solar cult of which it has ceased to be a symbol, in order to become almost a divinity by itself. The cross thus became a mystic symbol of which the applications became very numerous, and even very confused.

"All this, I repeat, is only a supposition, but it may enable us to affirm that, whatever may be the origin of the cross, its evolution, very probably, can only be explained from the point of view of the theory of the ideo-emotional arrest."

¹ See note on next page.

A. Note on Mental Inertia.

SIGNOR G. FERRERO has studied what he terms "mental inertia" and "the law of least effort," as applied to the mind, and he finds that the mental operation may stop short at certain points; thus he distinguishes (1) *mental arrest*, (2) *emotional arrest*, and (3) *ideo-emotional arrest*.

(1.) The first is due to a deficiency in logic; as, for example, when machinery was first introduced, the workmen smashed the machines, regarding them as the cause of the fall in wages, and being ignorant of the fact that the altered conditions were caused by complicated economic conditions, and not by the machines.

(2.) An analogous phenomenon occurs in the domain of the emotions. An emotion is not isolated, it is always one link of a chain. The emotions are always associated with a more or less great number of images or ideas which define them. But the image or the idea of the thing which should define the emotion sometimes dwindles or entirely disappears; it then follows that the emotion, instead of being associated with the image or with the idea of this thing, is associated with the symbol which represents this thing; it stops short at the symbol instead of projecting itself beyond the symbol towards the thing represented.

This is the *emotional arrest*. It is notorious that in religion the adoration which should be paid to God in heaven is often arrested at the images which represent the divinity, as when the elders of Israel said, "Let us fetch the

ark of the covenant of the Lord out of Shiloh unto us, that, when it cometh among us, it may save us out of the hand of our enemies . . . and the Philistines were afraid, for they said, God is come into the camp."¹

(3.) There is yet a third psychological process by which the confusion between the symbol and the thing symbolised is possible; it is the *ideo-emotional arrest*. In an analysis of the mental state of a man who performs acts of social ceremonial, this author finds (p. 133) that "to each completed act there corresponds, in the spirit of man, three states of consciousness, quite distinct and associated:—

- "1. The desire to cause the man to be favourable to him in whose presence the ceremonial act is accomplished (α);
- "2. The idea that the ceremonial act can serve this purpose (β);
- "3. The idea that the act can serve this purpose because the suppliant understands that he who has put himself in the position where he is unable to do harm cannot have any dangerous intention (γ).

"The mental state of those who entreat the gods was, in this primitive period, composed of the same three states of consciousness, quite distinct but inter-related:—

- "1. The desire to make the divinity favourable to oneself (α);
- "2. The idea that certain acts or practices (prayers, visits, etc., etc.) conduce to this result (β);
- "3. The idea of the reason for which these acts have this power—that is to say, the conviction that they are adapted to the character attributed to the divinity (γ).

"It is evident that if we compare the mental state of men who are in harmony with ceremonial observances in this primitive period of ceremonial with the mental state of civilised men who still observe ceremonial, social, and

¹ 1 Samuel ix. 3, 7.

religious rules, we find that in the mental state of civilised men the third state of consciousness—that is to say γ , has been eliminated. In fact, we have remarked that, among civilised man, the performance of a ceremonial act is determined by the desire to render himself favourable to, or at least not to offend another person or a God (α), and from the idea that these acts can produce this effect (β); without knowing why (that is to say that γ has been eliminated).

"We have seen that by the law of mental inertia, a state of consciousness—image, idea, emotion—cannot last for ever, after the exciting cause has ceased to act, for a state of consciousness is a transformation of energy, and it finishes when it has exhausted its initial quantity of force.

"Only the states of consciousness which, being necessary for the needs of existence, are preserved by permanent excitation,—be this excitation simple and direct or complex and indirect—can have an apparently eternal persistence; the duration of useless states of consciousness is limited.

"This is true for individuals or bodies of men. To each institution, to each custom, etc., there correspond in the mind of man a certain number of associated ideas, which have determined alike its birth and transformation; but, according to this law, only the ideas which are necessary should be preserved in this association of ideas; the others should be gradually eliminated.

"This interesting psychological phenomenon of *ideo-emotional arrest* concludes by profoundly modifying ideas and feelings. It modifies ideas, for it induces what I have termed a *mental arrest*; the ideation, in fact, by the loss of the state of consciousness γ , is arrested at β ; and the mind is contented to know that a certain act will produce a certain effect, or will express a certain sentiment, without troubling itself with the cause, without seeking for an explanation. It modifies, and, so to speak, displaces the feelings, for it produces that what I call an *emotional arrest*;

in fact, when the idea of the true character of the ceremonial act is lost, the act is no longer a sign of certain inclinations of sentiment, but itself becomes an object of veneration. We see men who pay attention only to ceremonial and who neglect the feelings on which it should be based . . . they believe they have fulfilled their religious duties, even if love and devotion are wanting, if they have not neglected the ceremonies. It is the same with the social ceremonial; for the majority of men, social duty does not consist in loyalty, in mutual affection, in a spirit of justice towards others, but in ceremonial observances; and when the ceremonial code is not violated they are persuaded that they have nothing for which to reproach themselves. It is a true *emotional arrest*, for the sentiments of social and religious duty are, so to speak, arrested midway in purely external acts."¹

¹ *Loc. cit.*, p. 139.

THE SCIENTIFIC METHOD OF STUDYING DECORATIVE ART.

THERE are two ways in which art may be studied—the æsthetic and the scientific.

The former deals with all manifestations of art from a purely subjective point of view, and classifies objects according to certain so-called "canons of art." These may be the generally recognised rules of the country or race to which the critic belongs, and may even have the sanction of antiquity, or they may be due to the idiosyncrasy of the would-be mentor.

In criticising the art of another country it must be remembered that racial tendencies may give such a bias as to render it very difficult to treat foreign art sympathetically. Western Europe and Japan are cases in point. Dogmatism in æsthetics is absurd, for, after all, the æsthetic sense is largely based upon personal likes and dislikes, and it is difficult to see what sure ground there can be which would be common to the majority of people.

The æsthetic study of art may very well be left to professional art critics.

We will now turn to a more promising field of inquiry, and see what can be gained from a scientific treatment of art. This naturally falls into two categories, the physical and the biological.

I am not aware that much has been done towards establishing a physical basis for art. The pleasurable

sensations which line, form, and colour may give rise to are doubtless analogous to those caused by musical sounds, but with this difference, that the latter are caused by the orderly sequence of particular vibrations, whereas the vibrations of the former are synchronous. It is possible that not only must the character of these vibrations be taken into account, but that the structure of the human eye and personal equation must be allowed for in an analysis of the pleasurable sensations caused by any work of art. These remarks necessarily refer only to the forms of things; their meaning and the sensations thereby evoked belong to the domain of psychology.



I. APPLICATION OF BIOLOGICAL DEDUCTIONS TO DESIGNS

At present, however, we are only concerned with the biological treatment of art. Nor need surprise be felt if an attempt is made to deal with art as a branch of biology. For is not art necessarily associated with intelligence? Is not intelligence a function of the brain? And is not the brain composed of some form of protoplasm? Art is thus one only of the myriad results of the activity of protoplasm. If this be true, art must be subject to the same general laws which act on all living beings.

The fundamental law in biology is that expressed in the well-known aphorism, *Omnis vivum e vivo* ("All life from life"). The belief in abiogenesis or spontaneous generation, as now taking place, has completely disappeared from biological teaching.

In studying savage art we are irresistibly forced to an analogous conclusion. By carefully studying a number of designs we find, providing the series is sufficiently extensive, that a complex, or even an apparently simple pattern, is the result of a long series of variations from a quite dissimilar original. The latter may in very many cases be proved to be a direct copy or representation of a natural or artificial object. From this it is clear that a large number of patterns can be shown to be natural developments from a realistic representation of an actual object, and not to be a mental creation on the part of the artist.

There are certain styles of ornamentation which, at all events in particular cases, may very well be original, taking that word in its ordinary sense, such, for example, as zigzag lines, cross-hatching, and so forth. The mere toying with any implement which could make a mark on any surface might suggest the simplest ornamentation to the most savage mind. This may or may not have been the case, and it is entirely beyond proof either way, and therefore we must not press our analogy too far. It is, however, surprising, and it is certainly very significant, that the origin of so many designs can now be determined, although they are of unknown age.

It is therefore not too much to say that savages do not deliberately invent patterns or designs; in other words, artistic expression is the result of a pre-existing visual impression.

Great difficulty presents itself when we apply this statement to communities of a higher culture; but there is no reason for believing that the case is different for barbaric races from what it is among the more savage.

It is when we come to highly civilized people that the problem becomes well-nigh insoluble. People often designedly "invent" patterns, and imagine that such designs are truly original. It is impossible to prove whether or no the artist has ever seen either a similar pattern, or at all events the elements of which his design is composed. It is very difficult to conceive that the latter is not the case. All that we can do is to fall back on the simple conditions, and we have already seen what obtains there.

This argument is strengthened by the fact that those who wish to "invent" new designs so often have recourse to objective assistance. The students in our schools of art are instructed to study natural forms, especially plants. Not only have they to manipulate the plant as a whole, but the flower has to be dissected, and even such details as the cross-section of the seed capsule are taken into account

Intelligent selection and rejection and judicious grouping may give rise to an infinitude of designs and patterns.

More mechanical aids are often pressed into service, and the compasses and other drawing instruments are employed, perhaps as often on the chance of a pleasing combination resulting or being suggested, as to elaborate some definite idea. The well-known Japanese pattern books afford a good foreign example of this method.

Instructors have not overlooked such optical aids as the kaleidoscope or analogous apparatus for pattern-making.

Once a design is started, be it the simplest of geometrical forms or a representation of a definite object, its subsequent fate is subject to vicissitudes very similar to those which beset the existence of any organism.

Organisms have offspring which at the same time resemble and differ from their parents.

This is the commonest experience one meets with in studies in ornament; certain simple patterns, on account of their simplicity, may be indefinitely repeated, and that without appreciable variation. Like simple chemical compounds, they are stable because there are few combining elements, and these are well linked together.

On the other hand, the more complex the original idea the greater opportunity there is for variation, in fact variation is inevitable. Just as in the highly unstable molecules which build up protoplasm, there is practically no alternative except for metabolism to take place.

In no case have we a series of designs which are known to be, so to speak, genetically related. We cannot say that this was a copy of that, and that of some other known form, and so on. Neither have we in Palaeontology. A student of the latter science brings together as many specimens as he can from different geological horizons, and finding that the forms of a more recent deposit resemble with but slight differences those from an earlier formation, he not unreasonably concludes that the former were descended from

the latter, and that the differences in the species are to be accounted for by the fixing and isolating of variations such as are commonly to be met with in members of one family.

The biologist, recognising the great importance of the theory of evolution, now rears generation after generation of animals to see how far actual experience will bear out theoretical deductions, and by this means definite facts are being accumulated. The credit of first applying this principle to art is due to General Pitt-Rivers. He gave a certain drawing to some one (A) to copy; his rendering was sent on to another person (B) to copy, this copy was handed on to a third individual (C), and so on, each copyist having only the preceding person's performance before him. In each case fresh variations occur according to the greater or less imitative skill of the artist. The General has collected some very curious examples of series of this kind.

Mr. H. Balfour,¹ following this suggestion, describes how he started a similar experiment. He says, "An original drawing of my own, representing a snail crawling over a twig, was given out to different people to be copied as I have described. In a series of twelve to fifteen copies thus obtained, the snail's shell gradually leaves the snail and becomes a kind of boss upon the twig, and finally the design is turned upside down; the artists at this stage being convinced that the sketch is intended to represent a bird, the 'horns' of the snail having become the forked tail of the bird. It is seen that the extremes of the series are absolutely unlike each other, but in no case are any two adjacent sketches very dissimilar."

Unfortunately, in the examples given in the earlier pages of this book, as in those presented by other writers, we are

¹ H. Balfour, "The Origin of Decorative Art as Illustrated by the Art of Modern Savages," *Midland Naturalist*, viii., 1890; *The Evolution of Decorative Art*, 1893, p. 24; "Evolution in Decorative Art," *Journ. Soc. Arts*, viii., 1894, p. 458.

not as a position to definitely affirm that one particular design is genetically related to another one. We have the same difficulty in paleontology; but the impossibility of absolute proof does not weaken the strong presumptive evidence in its favour.

We are also brought face to face with another interesting zoological parallel, and that is the co-existence of primitive, intermediate, and late types. It is not always easy to suggest explanations in zoology why some forms should persist and others disappear, but these difficulties are no argument against evolution having occurred. Amongst savage peoples we often find a surprising number of intermediate stages, but one explanation is ready to hand. The original is usually always before them, and all stages in the evolution of a design are decorative; they are all "fit" enough to survive, and the majority of them may persist for an indefinite time. In the animal world small changes in the environment may produce far-reaching effects on organisms, and the persistence, not the change of type, is the greatest marvel.

In zoology it appears that the more complex animals, or perhaps rather the more complex members of a group, vary more than the simpler. It would be interesting to work out whether the same occurs in patterns. I am inclined to think that this will be found to be very generally the case. Increased variation occurs because there is more material to vary. The next step is to determine what directions the variations take.

Development may take place (1) with a general tendency towards complexity, or (2) towards simplification, or (3) these two may be coincident. That is, there may be (1) an upward or specialising evolution, or (2) degeneration, or (3) selection, which implies partial elimination and a specialisation of the selected details.

(1) Not many examples present themselves of the evolution of a particular motive as a whole; as usually

one portion of it diminishes and another increases. What may be termed symmetrical evolution must necessarily be of rare occurrence. An example will be found in the progressive development of a fish-hook into an ornament in Torres Straits (p. 76, Fig. 44).

Occasionally one meets with examples of a considerable amount of partial complexity without a degradation of the remainder.

(2) The simplification of original types is of extremely common occurrence in decorative art. This has often impressed itself on those who have interested themselves in handicrafts of savages. In addition to the numerous examples I have brought together in this book I need only refer to the pioneer observations of Sir John Evans in 1849 in his well-known study¹ of the degeneration which occurred in the Gaulish and British copying of the gold stater of Philip II. of Macedon. Later,² he says, "those varieties appear to have become more or less persistent, which, in the 'struggle for existence,' have presented advantages over the present form in their relation to external conditions. But in the succession of types of these British coins, the requirements which new types had to fulfil in order to become to a certain extent persistent, were, firstly, to present facility of imitation, and secondly, symmetry of form. The natural instincts of uncivilised man seem to lead to the adoption of simple yet symmetrical forms of ornament, while in all stages of culture the saving of trouble is an object of universal desire."³ The reduction of a complicated and artistic design into a symmetrical figure of easy execution was the object of each successive engraver of the dies of these coins, though probably they were themselves

¹ "On the Date of British Coins," *Naturalistic Chronicle*, xiii., 1850, p. 147.

² *Ancient British Coins*, 1864, p. 27.

³ I venture, however, to question whether this is in reality very operative among savages.

unaware of any undue saving of trouble on their part, or the results which ensued from it."

While degeneration is of so frequent occurrence in the history of decorative art, one must not assume that this must invariably be the case; every series must be judged independently. One commonly finds that the earlier representations of glyptic art were crude and highly conventional, but they became more life-like as the artists gained more command over their material, and perhaps at the same time the fabricators or the purchasers were gradually educated to prefer greater truth to nature.

(3) The third alternative is by far the most frequent. Typical examples are to be met with in the rich field of the decorative art of the Papuan Gulf. Fig. 13, p. 36, will serve as an example: here each star-like figure is the remains of two human faces; the eye-spot is the amalgamation of the two pairs of eyes, the lateral angled lines represent the cheek-folds, and the curved lines next to these are the lower eye-lashes of each face, and nothing more of the faces persists.

It would be absurd to endeavour to make the evolution of decorative art run on all fours with that of animals, as there are certain art forms which have no parallel in zoology. In patterns, for example, the two essential elements are symmetry and repetition; the latter implicates not only the whole design but portions of it as well. Thus, if in an early stage of a realistic design there is a blank area, the vacancy will usually be filled up by repetitions of that detail of the whole design which is nearest to it. For example, the scroll pattern of the Massim district of British New Guinea originates, as we have seen, from serial repetitions of a bird's head. In the simplest forms of this pattern there are blank triangular areas, but these are usually filled up by a series of crescentic lines (Fig. 25), which are repetitions of the curve bounding the base of each triangle. In the Elena district the designs have an increasing tendency

towards angularity, so, similarly, areas unoccupied by the main design are very frequently filled up with chevrons, as in Fig. 16.

The objection to this method of treating art may be urged that the decorated objects, whatever their nature may be, are inanimate, that they are merely pieces of wood or stone, and that they are therefore not to be compared with living beings. It is perfectly obvious that ethnological objects cannot change themselves or develop themselves into anything else. On the other hand, though animals are alive they also have no voluntary power to alter themselves, nor can they develop themselves in any direction. They are almost as passive as fabricated objects.

The small amount of change which may occur in the adult existence of an animal (I purposely exclude all changes which take place during development and growth) are due to forces acting upon the animal, and to which the animal more or less responds; they are not self-induced. The zoological and ethnological specimens, in this respect, are in precisely the same case.

The direction which evolution takes, whether it makes for a more highly sensitive being or for degeneration, has reference to offspring alone and not to their parents, immediate or remote. There is no conscious and protracted effort on the part of a particular group of animals to evolve in a determinate direction, this latter is circumscribed by the environment. Thus it comes about that consciousness has no part in evolution whether of an animal or of a pattern. The offspring of an animal vary more or less from the parent just as copies of designs vary, and both are alike subject to an external selection. If this selection proceeds sufficiently long in one general direction, a distinct and non-relapsing variation is established, and so on indefinitely.

One distinction between the evolution of animals and that of patterns must not be lost sight of: in the former the survival of the fittest appears to be mainly due to an

elimination of the un-fittest, whereas in the latter there is a certain amount of conscious selection.

A further argument against this view may be urged from the standpoint that however unconscious the evolution of the lower animals may be, the case is very different with man. He is conscious and self-conscious, and he can direct his own evolution. In the first place, "Can he do so?" and in the second, "Has he done so?" First let us see what has happened.

I suppose it is one of the best established teachings of history that the evolution of a nation has not been consciously directed by the individuals which compose it. A few men may have sought to guide the course of politics or to adjust its foreign policy; but their efforts are futile unless supported by the people themselves, and the luxuriousness of living of the majority, the laxity of their morals, or some other irresponsible factor, may entirely wreck individual effort. Nations as a whole have blindly worked out their own salvation or ruin in just the same way as a group of animals living in geological times may have survived to the present day or may have become extinct.

The essential conservatism of the human mind is a fact of prime importance. Savages, children, and the less intelligent of the civilised races are similar in this respect. This has long been recognised, and that "there is no new thing under the sun" is an oft-repeated, widely-recognised truism. In proportion as change is rare, so progress is slow. It is only the happy coincidence of certain combinations which acts as a stimulant to variation, but this appears to have an increasing tendency to occur. The more savage the race the more conservative it is as a rule.

Just as the tendency to variability is of necessity a steadily increasing factor in the evolution of animals, so it is in man, and proportionately more so as he is raised above the level of the brute. Increase of complexity leads to that instability which is the mother of variability.

The above-mentioned statements are merely expressions of facts known to all. It will probably be admitted that among less civilised peoples their evolution may have been undirected by themselves; but with increased complexity comes augmented mental power, and it may be urged that this may, so to speak, take the helm; but I would venture to ask, Is there *much* evidence in support of this view? The mind of man is subject, like his body, to the ordinary operations of the universe, his individuality is apparent rather than real, and just as one may move to and fro on the face of the earth yet at the same time the traveller and the bed-ridden person are revolving round the axis of the earth at the same rate, and are equally trundling with the globe through space, so, too, mind cannot escape from the forces which act on the body.

It is believed by some that there were periods in the history of organisms when evolution took place more rapidly than at other times; perhaps this was due to variability occurring more extensively, which again may have been partly due to changes in the environment. There is no reason to believe that variation (which is the material that makes evolution possible) occurs uniformly. There is no need to touch further upon these yet unsolved problems of Biology; at all events we find that in decorative art evolution has been spasmodic or discontinuous, that there are periods of quiescence and of activity. I have already suggested that the isolation of a people and uniformity in their existence will tend to stagnation in art, and that intercourse with other peoples, whether by trade, war or migration, serves as a stimulus to artistic expression.

To return to our more immediate subject, consciousness of purpose has extremely little to do with human evolution, nor has it much more to say to the evolution of patterns among primitive peoples.

The selection of one design instead of another, or of a particular part of a design, is a conscious act, but probably

in the great majority of cases an unreasoning one. And the selection is limited to that individual object. It is inconceivable that a savage should copy or adapt a certain design because it promises to develop into a more pleasing pattern. While there is a certain amount of conscious selection, the variation as a whole of any design is an entirely unguided operation so far as the intelligence of the human units is concerned.



II. THE GEOGRAPHICAL DISTRIBUTION OF ANIMALS AND OF DESIGNS.

No part of the study of Biology is more fascinating than that which deals with the geographical distribution of organisms, especially when treated by such a master as Alfred Russel Wallace. The geographical distribution of art is as yet uninvestigated, but with careful and capable handling we may expect it to yield results not less interesting than those of the distribution of animals. It is needless to point out that the subject is peculiarly difficult, but as John Ray said two hundred years ago concerning the study of Natural History, "much might be done did we but endeavour, and nothing is insuperable to pains and patience."

It will not be superfluous to here indicate the general lines upon which such an inquiry may be profitably made, taking the experience of zoologists as our guide in this matter.

It is a matter of general experience that animals are not uniformly scattered over the globe. The absence of all land mammals and of snakes from New Zealand; the occurrence of the monotremes only in Australia and New Guinea; that the American opossums are the only marsupials found out of Australia and a few adjacent islands; the absence of bears in Africa and of lemurs in America, are a few of the myriad cases in point.

By tabulating the denizens of different countries, the latter can be grouped according to their animals, and in

this way zoologists have formed zoological regions, which may be further subdivided into sub-regions or provinces. All such divisions are characterised (1) by their characteristic animals, (2) by their peculiar animals, and (3) by the absence of certain groups of animals. The negative character in this case being perhaps the most valuable one.

Organisms may in a rough manner be distributed into zones corresponding with climate, which may be horizontal and largely dependent upon latitude, or vertical and directly dependent upon altitude, which varies, however, according to latitude. Such a kind of distribution is much more manifest in plants than in animals.

Further, there is a phenomenon known as "discontinuous distribution," which is one of great importance. For example, the tapirs are only found in Central America and in the Malay Archipelago, the camel group in South America and the deserts of Asia, the ostrich group in South America, Africa, Australia, New Guinea, and New Zealand. It is needless to multiply examples. The explanation is simple enough. The tapirs are representatives of old generalised ungulates of early tertiary times that formerly lived in the northern hemisphere, but which have since become exterminated in the region of their origin and abundance, and have survived at only two extreme points of their old habitat. Ancestral camels are common in the tertiary beds of North America; the one group wandered southwards, and finding competition less keen on the plateaux of South America, were enabled to develop into llamas, alpacas, and so forth. The other group was modified so as to exist in the deserts of Asia, the less specialised forms in the intermediate countries having died out. The same general argument applies to the ostrich group, and in the case of South America, the ostrich of Africa, the cassowary of New Guinea, the emu of Australia, the diminutive apteryx and the gigantic extinct moas of New Zealand we have outliers, so to speak, of an extremely ancient group of

birds, the other members of which have become exterminated in the intermediate districts.

Then again, there may be what are termed "local types and species," forms which differ but slightly from the characteristic or "central" type of the species, and which are restricted to special regions. For example, in an island off a mainland there are often what are termed "insular varieties," and in an archipelago it is of frequent occurrence that each island is characterised by possessing its peculiar varieties and even peculiar species. Isolated geographical features, such as commanding and separated mountains, may have what may equally be termed "insular faunas," or again, the various valleys of a mountain chain may have appreciable faunistic differences.

The reason for this is not far to seek. These varieties differ from others merely by being intensified by local conditions and by isolation. Variation is more widespread than is generally supposed, but granting freedom of intercourse over a wide area and a stability of environment, the extreme variations are less liable to occur, and, furthermore, it is the average organism which is the most stable. Thus a fairly constant mean level is maintained. The isolation of portion of such a uniform population introduces new factors, and the isolated individuals tend to arrive at a condition of stable equilibrium which must of necessity be different from that of the parent stem.

Colonies are probably of rare occurrence in the zoological world. By such I mean the sudden peopling of a district by an animal new to that part of the country. An example of how this may occur is illustrated by the sporadic excursion into Europe of Pallas' sand-grouse. It will be remembered that a few years ago large numbers of this Siberian bird made their appearance in Europe. Similar incursions are on record for past years.

Supposing the conditions were favourable, the sand-grouse might very well have established itself in one or more

localities, and then formed colonies in the true sense of the term. Artificial colonies are being continually formed by man: witness the rabbits in Australia and the pheasant in England.

The dispersion of animals is caused by the favouring conditions of physical features, or by the carrying power of winds and currents. The isolation of animals is also similarly caused; winds and currents may be in such a direction as to prevent migration, and the physical features may be otherwise unfavourable to dispersion.

We now have to apply these general remarks to the province of art, and to see how far similar conclusions may be drawn.

The conclusions of the synthetical zoologist who studies the problems of zoogeography, as it is sometimes called, are entirely dependent upon the tedious labours of the analytical or systematic zoologist. General conclusions are worth nothing if the data upon which they are erected are untrustworthy; hence an accurate identification of the fauna of a country is an absolutely necessary precursor to any theorising upon its affinity.

This self-evident proposition equally applies to the geographical distribution of art-forms. It is first of all necessary to determine the exact nature of any given pattern or design. I have often called attention to the danger which there is in assuming that similarity is identity, the most instructive example of this being exhibited in the fret-pattern group and the allied scroll-patterns. Instances could be multiplied were it necessary. One of the main objects of the present volume is to emphasise this fact, and to demonstrate that the signification of a design, that is, what it really is, can only be ascertained by an exhaustive study of that particular region where it occurs or from whence it has been derived. Analysis must precede synthesis. This has not yet been attempted on a large enough scale, and so it is at present impossible to deduce wide generalisations.

Art is subject to two prime factors—(1) the solidarity of the human race, and (2) ethnic idiosyncrasy. It is the extreme difficulty in distinguishing between these two factors which complicates the comparative study of customs and beliefs.

To the second of these we owe, for example, the evolution of the various forms of fret and scroll pattern, and to the first of them their world-wide retention as patterns.

It is difficult to avoid the expectation that whatever artistic provinces may be defined in the future, they will ultimately prove to be related to racial divisions.

Possibly certain stages of artistic evolution may be determined through which the artistic development of all the more cultivated people have passed. These stages, should they be established, are illustrations of the solidarity of mankind, but the precise level to which the art of particular country or district has attained, or the direction it has taken (irrespective of the stage of development), these are ethnic idiosyncrasies.

Before the geographical distribution of art can be mapped out it will be necessary to accurately define the various artistic expressions, and to discriminate between designs, which though apparently similar are fundamentally distinct. Not till then will it be possible to determine whether particular designs are world-wide in distribution on account of the essential identity of human thought, or whether they are not really different patterns which admit of being grouped into definite regions having a more or less ethnic value.

It is not sufficient to attempt a rapid solution of this problem by assuming that artistic and ethnic boundaries are coterminous. My study of Papuan art indicates that the artistic expression of a people is more delicate than the characters usually utilised by ethnologists, and that, whereas the physical anthropologist can at present barely distinguish between the natives of contiguous districts, their art at once suggests distinctions, and then a fresh appeal has to be

made to the physical anthropologist for a more searching investigation.

On the other hand, there is no doubt that in some countries art is more uniform, certainly so in countries which have long been civilised.

In Australia the art appears to be very uniform, this may be chiefly due to the fact that the Australians, though subdivided into numerous tribes, are nevertheless a very homogeneous people.¹ It is true that some anthropologists have sought to distinguish primitive divisions among these people; but these endeavours have not yet been thoroughly established, and no investigations have as yet been made as to whether the arts and crafts of the Australians support these conclusions. Another factor in the uniformity of Australian art arises from the fact that all the Australians are virtually on the same level of evolution. The uniformity of condition of life and environment induces uniformity in art.

This latter fact may account for the general resemblance in artistic treatment which yet more distinct peoples may exhibit who live under very similar conditions; their ethnic idiosyncrasy may be levelled by the monotony of their environment.

Lastly, uniformity may be arrived at, as in most civilised countries of to-day, by continual and rapid intercourse between peoples. It is just this condition, together with a certain amount of stability in the environment, which makes for the uniformity and fixation of species in the animal world.

I am inclined to believe in an ethnical feeling for art, but much more work will have to be done to establish this as a fact. In our detailed study of the decorative art of British New Guinea we find a sudden and very characteristic change in Papuan art when we come to the Massim district,

¹ It by no means wish to imply that a homogeneous people implies a pure race; a people composed of several elements, if well mixed up and isolated for a long time, may become fairly homogeneous.

The characteristic Papuan ornamentation by means of straight lines and angles suddenly gives way to a variety of scrolls and loops, straight lines, except as bounding a pattern, rarely occur, and angles are much rarer than bowed lines are in other parts of New Guinea. The *faces* of the style of decoration is exactly reversed. This surely has a deeper significance than tribal distinction, and it was noticing this fact which first led me to study New Guinea art. The explanation which suggested itself to me was one which subsequent investigation has confirmed—namely, that it is one expression of the influence of a foreign race on the Papuans of the region in question. Professor E. T. Hamy has marshalled numerous facts in support of this view in an able paper ("Étude sur les Papouas de la Mer d'Entrecasteaux," *Revue d'Éthnographie*, vii, 1888, pp. 503-519), to which I have already referred.

So far then as present evidence goes, we may assert that the ornamentation of the indigenes of New Guinea is essentially composed of straight lines and angles. The characteristic fretwork and carving of Netherlands New Guinea—notably that of Geelvink Bay—is clearly due to foreign influence. The same also applies, as we have just seen, to the opposite corner of New Guinea. Future research must determine the amount and geographical extension of analogous influences in these portions of New Guinea, and also extend this line of inquiry to other parts of the world.

In seeking to establish artistic provinces we must note (1) the characteristic forms and designs, (2) those that are peculiar to the district, and (3) the deficiencies.

To take examples:—(1) the white lotus (*Nymphaea lotus*) is as decidedly characteristic of the decorative art of Ancient Egypt as the frigate-bird is of that of the Solomon Islands or of the Massim district of British New Guinea; but these are not peculiar to these districts, as both the lotus and the frigate-bird motives extend beyond the regions named.

(2) The employment of highly conventionalised and degenerate human figures to cover comparatively large areas is, so far as I am aware, peculiar to the Hervey Group,¹ as also is the device of nature-printed ferns on tapa in certain Polynesian islands.

(3) The absence of the frigate-bird as a decorative motive throughout the greater part of British New Guinea is as important a fact as its presence in a comparatively small district. The absence of scroll designs, and practically of sigmoid lines, in Torres Straits and Daudai and throughout the greater part of the Central District of British New Guinea, is as significant as their occurrence in the Massim district; or their general absence in Eastern Polynesia with their prevalence in New Zealand.

What is known as a zonal distribution in organisms only occurs in anthropology when a district is inhabited by different peoples that live concentrically to one another. Such, for example, as the Negrito populations which inhabit the centre of the Mollaccan Peninsula or the centre of some of the islands of the Malay Archipelago and are surrounded by Malay peoples; here we have a core, so to speak, of one type of decorative art surrounded by a different type.

Discontinuous distribution occurs in art as well as zoology, and the solution of each problem must be attempted from the scientific standpoint.

A good example of such a problem is to be found in the distribution of the fret and scroll patterns to which I have frequently alluded. Further study is necessary before we can say definitely whether a given fret or meander pattern has been independently evolved, or whether it has spread from elsewhere. In our study the problem is more complicated than in zoology, for a multiple origin of a given

¹ Dr. W. Hein has just published a well illustrated paper on anthropomorphic designs among the Dyaks (Borneo), *Ann. & L. nat. Hist. Museum, Vienna*, 2, 1895, p. 94.

design or pattern is always possible and often probable, whereas this is not known to occur for a single species of animal. Discontinuity in distribution in ethnography may mean either that the form has a multiple origin or that it has migrated without establishing itself in the intermediate districts, or that it has disappeared from those districts.

It is evident that every pattern or set of patterns in the first instance has to be separately studied in a limited area, in order to determine whether it is of indigenous or foreign origin. No casual application of general principles will suffice, for it is possible that in certain cases a design may be apparently fairly uniformly distributed over a certain area, and on the face of it one might be tempted to regard this as a case of uniform distribution, whereas on a more minute examination it may be found that the designs are analogues and not homologues, that they have spread from different centres of origin, and thus the apparent uniformity of distribution may be essentially invalid. I suspect this is largely the case in the meander and scroll patterns.

We often find that a particular type of decoration occurs over a certain area, but within the limits of that district there are several distinct varieties. Students at home usually have a great difficulty in studying this problem owing to the very imperfect and unsatisfactory way in which objects are labelled by collectors. In my memoir on *The Decorative Art of British New Guinea* I have attempted to work out the local varieties both of form and decoration of the lime spatulas of the Massim district. According to the material at my disposal, it does seem that certain types are characteristic of, if not peculiar to, particular groups of islands. The more or less complete isolation of tribes or peoples, owing to geographical conditions or inter-tribal wars, is sufficient to account for local types and insular varieties, even when the people all belong to the one stock. If that stock is a mixed one, variations are much more likely to occur than if it is a pure race.

or a people that have become homogeneous by prolonged isolation.

Local types may, however, be due to the presence of a colony from another district. There are numerous examples of this in Melanesia, where colonies of Polynesians have arrived from more eastern island groups in Oceania, and as I have pointed out, there are Melanesian Colonies in British New Guinea. To use a geological term, these are ethnological outliers.

As decorated objects must be conveyed by man, the means for their dispersal and the barriers which militate against it are the same as those which operate on human migrations; but there is one difference. Where men go we may assume that they carry their artistic efforts and proclivities with them, but decorated objects may be carried further than the actual distance covered by the manufacturer, or even than the recognised middleman or trader.

This brings us to a very important aspect of the subject, and that is the question of trade-routes. Trade-routes are culture-routes, and in order to appreciate the history of culture it is necessary to know the directions in which it flowed. Until we have a more complete knowledge of the ancient trade-routes of Europe we cannot recover the history of pre-historic Europe. The information for this is being rapidly accumulated, and for a summary of our information I would refer the reader to Mr. George Coffey's "Origin of Pre-Historic Ornament in Ireland."¹ I would support my position with the following quotations from Count Goblet d'Alvielle:—

"Whatever the similarity of form, and even of meaning, may be between two symbolic figures of different origin, it is proper, ere we assert their relationship, to show the probability, or at least the possibility, of international relations which would have served as a vehicle for transport.

¹ *Irish. Rigs. Soc. Antiq. of Ireland*, v. (5th ser.), 1895, p. 32; cf. also the quotation from Mr. Arthur Evans, p. 142, *ante*.

This point once set at rest, it remains to be seen who was the giver and who the receiver.¹

"Whether we start from Japan, from Greece, from India, or even from Lybia, from Etruria, or from Gaul, we always arrive, after many halting-places, at two great centres of artistic diffusion, partially irreducible as regards one another, Egypt and Chaldaea—with this difference, that, towards the eighth century before our era, Mesopotamia took lessons from Egypt, whilst Egypt learnt little of any country.² Not only did symbols follow the same paths as purely ornamental schemes, but they were also transmitted in the same manner, at the same periods, and in nearly the same proportion. Concerning symbols as well as artistic products, we everywhere find, by the side of aboriginal types, the deposit of a powerful current which has its more or less distant origin in the symbolism of the banks of the Euphrates, or the Nile. In a word, the two classes of importations are joined together to such a degree that in writing the history of art we write to a great extent the history of symbols, or, at least, of their migrations."³

These quotations from Count Goblet d'Alviella enunciate the right method of studying symbols. He points out, as I have again and again insisted for patterns, that mere resemblance must not be mistaken for identity; before two similar symbols in different countries can be regarded as being the same symbol, it must be proved that there has been direct or indirect intercourse between those countries. Hence the primary importance of the study of trade routes, for these are also culture routes, and patterns and symbols are the flotsam and jetsam of the influences that flow along them.

We may then recognise several main influences which may make for the distribution of designs—(1) the swarmings of peoples; (2) the establishment of organised or adven-

¹ *Loc. cit.*, p. 260.

² *Id.* pp. 143, 122, 129 *infra*.

³ *Loc. cit.*, p. 263.

litious colonies; (3) the inroads of armies; (4) a general drift which is so slight as to be scarcely appreciable; and (5) trade, which usually proceeds along definite routes, and it is these that armies also generally follow.

A word of caution is necessary in dealing with trade-routes. Whereas the decorated objects pass along them and are distributed far and wide, it does not always necessarily follow that the ornamentation itself is naturalised. It is probable that in many cases a certain style of decoration is associated with a particular kind of object, and it might not occur to people to transfer that decorative style to other objects, or at all events the process would doubtless be slow.

One very good reason is that the indigenous objects are already decorated, a type of ornamentation is associated with a type of object and the feeling of expectancy demands for its satisfaction that this shall continue to be the case.

Again, we know that the majority of peoples do not appreciate new designs or patterns. They know nothing about them, they have no associations with them, they take no interest in them. In other words, it may take a long time for an exotic to become naturalised.

An example of this occurs in British New Guinea. The great annual trading voyages between the Motu and the Gulf tribes have not, so far as I am aware, had the least influence on the art of the two peoples; neither in technique nor designs have I seen any object which indicated that a borrowing had taken place. I consider this a strong argument in favour of the value of art in ethnological inquiries.

III. GENERAL REMARKS ON THE METHOD OF STUDY.

I HAVE endeavoured in the foregoing pages to formulate and illustrate some of the principles underlying the evolution of decorative art. The subject is so vast that it would be impossible to deal with it adequately unless a series of memoirs could be devoted to it. Here, however, I have been more concerned with the method of study; I have not attempted to seriously investigate even a single department, and various branches of the subject have either been merely hinted at or entirely passed over.

In all studies a right method is of fundamental importance, and in an attempt to understand the meaning of decorative art, as in other matters, a slight deviation from the right method of procedure may lead one far from the truth. Nothing is easier than to be led astray by superficial resemblances, and it is impossible to be too much on one's guard in this matter. Of this I have given some examples, but I have refrained from giving as many as I might have done, as it is not pleasant to show up the mistakes of pioneers, even if it be only for the purpose of warning others. As Professor Max Müller has said,¹ "Identity of form does as little prove identity of origin in archaeology as identity of sound proves identity of origin in etymology. Comparative studies are very useful, so long as they do not neglect the old rule, *Divide et impera*—Distinguish, and you will be master of your subject!"

¹ From an essay in Schlegel's *Über*, p. 348.

There are practically but two methods of work—(1) Inquiry from the people who employ the designs, or the testimony of written evidence when the people no longer know the significance of the designs; or (2) an investigation of induction and interpretation where oral or written tradition fail.

Beyond all question the most valuable results are obtained from oral information. I need only refer the reader to the investigations of Professors Ehrenreich and Karl von den Steinen (p. 174), and of Mr. H. Vaughan Stevens (p. 236), to demonstrate that by no other method could we ever gain any idea as to what was the meaning of these particular patterns and designs. In fact, the observations of these travellers make one very sceptical of any interpretations by outsiders.

This is undoubtedly the most important and pressing work in this subject. Only those who have visited backward peoples of certain grades of culture who have come into contact with the white man, can realise how rapidly the old lore is passing away. This may or may not be advantageous, but no one will deny that it is a thousand pities that scarcely any one thinks it his duty to inquire about and to put on record all that can be gathered about those peoples which our civilisation is either modifying or destroying. Every one who can will collect "curios," especially those which are decorated; but out of the hundreds of collectors, how many units have ever thought of asking the natives what was the significance of the ornamentation? I have already drawn attention to this need for Australia, but it is equally pressing in many other parts of the world. Even museum curators have in the past regarded ethnographical specimens more as "trophies" than as materials for the study of a history of mankind.

There are still some "collectors" (that is, purchasers of "curios") who think that when they know where an object comes from, and, may be, what is its native name, they know

pretty well all that is worth knowing about it. Others have realised that there is a history in every form and pattern.

What is wanted is an interpretation of the form, of the meaning of odd little details of contour, of indentation, or of projection. No apparently insignificant superfluity is meaningless, they are silently eloquent witnesses of a past signification like the mute letters in so many of our words. Almost every line or dot of every ornament has a meaning, but we are without understanding, and have eyes and see not.

But again, we must not stop short when we have determined what a form means, or what is the original of a device. We have to discover why it was so. The reasons for a motive, the meaning of its present form, have also to be sought. So we come to higher and finer analysis, and at last find ourselves studying psychology.

With so much to learn, it is evident that we must be sure of our premises, and hence the necessity for going to the original sources. But there is always considerable difficulty in getting at the truth, and a statement made by a native must never be accepted as evidence until it has been independently confirmed from other sources. Nothing is easier than to get unreliable information. This is not the place to enter into the various possible sources of error, but I would like to warn those who have the opportunity of getting information first hand, that it is impossible to take too much care, and all suggestive interrogation or leading questions should be totally avoided.

When we are dealing with written evidence the method is one of historical procedure. The means of information of the writer, his credibility, and other factors have to be taken into account; often, too, there is a sparsity, or even an absence of corroborative evidence, which tends to make the testimony uncertain.

Failing these direct methods of obtaining information, there remains the deductive and comparative method. The best example of this mentioned in the preceding pages is

Count Goblet d'Alviella's investigation of the fylfot; indeed his book is a model for method. In another field Dr. Stolpe's study of the decorative art of the Hervey Islands is a memorable and instructive piece of work.

With the examples of method which are here brought together the student should be in a position to prosecute researches in the innumerable fields which lay open to him.

I would, however, like to take this opportunity to say a word or two to those who wish to commence a study of decorative art from the biological standpoint.

No amount of trouble must be grudged in collecting the data, whether it be in the form of photographs, sketches, tracings, or rubbings; right conclusions largely depend upon a wealth of suitable material.

Rubbings of carved ornament can be made with great facility on tough, thin Japanese paper by means of heel-ball (Ullathorne's is the best, and it can be obtained from almost any working shoemaker; the paper is more difficult to obtain). The paper is firmly held on to the object, and then rubbed hard with the heel-ball; it is best to always rub the latter in one direction. Whenever possible it is desirable to make a rubbing of the whole of an object, but if only a portion is decorated the outline of the remaining portions need alone be rubbed. Next to photographs, rubbings are the most satisfactory method of obtaining copies of carved objects, as every detail and vagary is accurately reproduced, and they lend themselves very readily to reproduction in the form of "process-blocks," but it will be found that details will often have to be supplemented by sketches. There are, of course, many carved objects of which it is impossible to make rubbings. A very little experience will soon teach the beginner as to the best methods of procedure in any special case.

Professor A. Grünwedel¹ calls attention to the necessity there is for absolute accuracy when copying the ornamenta-

¹ *Zeitschr. für Ethnologie*, xxvi., 1894, p. 142.

tion of savages. "Still more dangerous [than mistaken interpretation] is the attempted 'correct' reproduction of aboriginal ornament according to the European, so-called, feeling for beauty, whereby somewhat crooked lines are replaced by straight ones, and unequal halves, which are deemed corresponding, are made alike. This method causes fundamental error, since through its corrections, it renders impossible a critical examination of the visual ability of wild races. The Orang-hutan draws a curve and sees it as a straight line, he makes too many legs, too few fingers, but has, in spite of these faults, according to our conceptions, the power of seizing abbreviations of parts of the body in a picturesque manner, of skilfully interpreting contours and of preparing intelligent ground-plans. The diagrammatic copying of primitive ornamental forms can therefore have no scientific value."

Two most important points to note are the locality whence an object comes, and the date of its manufacture and collection.

The former is essential, and it is not sufficient to obtain a vague locality like "New Guinea" or the "Solomon Islands," but it is necessary to know the district or the particular island, and, if possible, the exact spot. Information must also be obtained whether the object was made there or merely procured there. The native name of every object must be obtained, also the name of the several parts of it as well as of the details of its ornamentation. Of course the meaning should, if possible, be ascertained, but on no account should only one explanation be accepted as correct; it is necessary to check all such information by inquiry from independent sources, as there are numerous ways in which error can creep in, even when there is no question of intentional deceit.

It is rarely possible to ascertain the date of manufacture when dealing with ordinary ethnographical specimens in museums; as most of these are quite recent no sequence

in time can be made out. Even when objects are collected in the field it is rarely possible to obtain a succession of objects from a historical point of view. In all inquiries relating to historical or pre-historical objects, the time-element is as important as the place-element, and great care must be taken in order to ascertain dates and the relation of periods.

A great deal of light can often be thrown upon the meaning of ornament by a study of the manners and customs of a people; this is especially the case for their religion, using that term in its widest sense.

As long ago as 1857 Mr. Kemble¹ urged that ornamentation should be taken "seriously into consideration, because it forms one of the most important and characteristic criterions by which to judge of the tendency of a race. There is some reason in every ornament why it recommended itself to some particular people. We do not know what the reason was, but the difference itself is of the deepest moment." He points out that the spirit or feeling of art may be made the measure of culture when the workman is at liberty to impose what form and lines he will upon his material. Quite recently Professor Flinders Petrie said,² "Art is one of the most important records of a race. Each group of mankind has its own style and favourite manner, more particularly in the decorative arts. A stray fragment of carving without date or locality can be surely fixed in its place if there is any sufficient knowledge of the art from which it springs. This study of the art of a people is one of the highest branches of anthropology, and one of the most important, owing to its persistent connection with each race. No physical characteristics have been more persistent than the style of

¹ John M. Kemble, *Hera Females, or Studies in the Archaeology of the Northern Nations*, 1863, p. 80.

² Address to the Anthropological Section, British Association, Ipswich Meeting, 1895.

decoration. When we see on the Celtic work of the period of La Tène, or on Irish carvings, the same forms as on mediæval ironwork, and on the flamboyant architecture of France, we realise how innate is the love of style, and how similar expressions will blossom out again from the same people. Even later we see the hideous C-curves, which are neither foliage nor geometry, to be identical on late Celtic bronze, on Louis XV. carvings, and even descending by imitation into modern furniture. Such long descent of one style through great changes of history is not only characteristic of Celtic art, but is seen equally in Italy. Further east, the long-persistent styles of Egypt, of Babylonia, of India, of China, which outlived all changes of government and history, show the same vitality of art. We must recognise, therefore, a principle of 'racial taste,' which belongs to each people as much as their language, which may be borrowed, like language, from one race by another, but which survives changes and long eclipses even more than language. Such a means of research deserves more systematic study than it has yet received."

It may be asked why I have so largely confined my attention to the decorative art of savage peoples. The answer to this not unnatural question will be found in my introductory remarks.

The decorative art of civilised peoples is very complex, and the motives which prompt it are obscure; it appeared to me that our best chance of finding out the underlying principles was to study less complex conditions. I must confess that I have been mainly concerned to provide an efficient tool for the use of other workers, and I have not been anxious to elucidate the multitudinous designs and forms which beset us on every hand. This task I leave to my readers, and they need not confine themselves to decorative designs or patterns, for the forms and the adjuncts of objects are susceptible of the same treatment, and will yield analogous results.

Almost any manufactured object that may first meet the reader's eyes has a history that is bound up with the history of man. The eyes alike of the head and of the mind require to be opened. Too often we envy the traveller who has voyaged afar: If we had had his opportunities, if we had seen what he has seen—we too might have been able to make discoveries! We pine for the unattainable and neglect our opportunities. The world is before us, and that too at our very doors.





EXPLANATION OF THE PLATES.

PLATE I.—SEXUOMORPHS OF BINDING.

FIGS.

1. Part of the stone axe of Monterana II., Ambros Museum, Vienna [J. Evans, *The Ancient Bronze Implements of Great Britain and Ireland*, 1881, Fig. 180, p. 148].
 2. Socket of a bronze spear-head, Co. Galway, Ireland (Evans, *loc. cit.*, Fig. 393, p. 320).
 3. Socket of a bronze spear-head, Ireland (Evans, *loc. cit.*, Fig. 402, p. 326).
 4. Bronze palstave (socketed celt), Co. Meath, Ireland (Evans, *loc. cit.*, Fig. 172, p. 140).
 5. Bronze vessel, Lake of Bourget (F. Keller, *The Lake Dwellings of Switzerland*, 2nd ed., 1878, Plate CLIX., Fig. 1).
 6. Pattern on an ebony comb, Assyria (G. Perrot and C. Chipiez, *History of Art in Chaldea and Assyria*, ii., 1884, Fig. 227, p. 350).
 7. Pattern on a sculptured stone cornice (Perrot and Chipiez, *History of Ancient Egyptian Art*, ii., 1883, Fig. 288, p. 361, from *Prise d'Avennes*).
 8. Pattern on a perforated bone needle, Tinsalus, Holyhead (W. Owen Stanley, *Arch. Journ.*, xxxiii., 1876, pp. 94, 133).
 9. Back of a bronze knife, Estavayer (Keller, *loc. cit.*, Plate XCVI., Fig. 12).
 10. Bronze palstave, near Kingston-on-Thames (Evans, *loc. cit.*, Fig. 141, p. 125).
 11. Bronze palstave, Farnham, near Bury St. Edmunds (Evans, *loc. cit.*, Fig. 133, p. 122).
 - a. "Angular Meander," Wolvesey Castle, Winchester, temp. Stephen (*Archæologia*, xvi., 1812, p. 361, Plate LXII., Fig. 3).
 - b. Norman capital, "sections of branches" or bâillet ends, Peterborough Cathedral (*Archæologia*, xii., 1796, Plate XXXI., Fig. 4, p. 168).
 - c. Hut-urn, Etruscan, Monte Albano (*Museo Kircheriano, Rome*).
- d.f.* Sexuomorphs of the gable [*Household Furniture*].



PLATE II.—SKEUDOMORPHS OF WATTLE-WORK.

FIGS.

1. Impression of wattle-work on clay, Ebersberg (Keller, *loc. cit.*, Plate CXLIV., Fig. 16).
2. Bast twisted among willow rods, Rothenhausen (Keller, *loc. cit.*, Plate CXXXIV., Fig. 51).
3. Mat of bast, Rothenhausen (Keller, *loc. cit.*, Plate CXXXIV., Fig. 2).
4. Falcic of flax, Rothenhausen (Keller, *loc. cit.*, Plate CXXXVI., Fig. 4).
5. Falcic of bast, Rothenhausen (Keller, *loc. cit.*, Plate CXXXV., Fig. 3).
6. Coebula, Italy (W. Smith, *Dict. Roman Antiq.*, p. 285).
7. Basket on ivory plaque, Boulak (Perron and Chipiez, *Egypt*, II., Fig. 321, p. 388).
8. Earthenware bowl-russel, Stone Age, Denmark (Worsaae, *Danish Arts*, p. 36).
9. Bottom of a basket, Terramara Beds, Northern Italy (Keller, *loc. cit.*, Plate CXVI., Fig. 11).
10. Fragment of Pottery, Terramara Beds, Northern Italy (Keller, *loc. cit.*, Plate CXIII., Fig. 33).

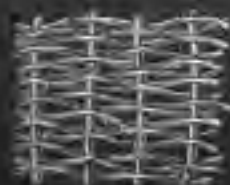


PLATE III.—SKEUOMORPHS OF BASKETRY.

FIGS.

- A. Hypothetical origin of a scroll from basket-work.
 n. Hypothetical origin of a curvilinear fret from basket-work.
1. Marginal pattern of a bronze buckler from Amathus, Cyprus (G. Perrot and C. Chipiez, *History of Art in Phœnicia and its Dependencies*, ii., 1884, Fig. 363, p. 420).
 2. Pattern on a bronze buckler from Ulu, Cyprus (Perrot and Chipiez, *loc. cit.*, Fig. 360, p. 418).
 3. Greek guilloché (Wormm, *Analysis of Ornament*, 7th ed., p. 58).
 4. Assyrian guilloché (Ginzler, *Notes on Ornament*, p. 8).
 5. Pattern on an enamelled Roman vase, Barlow Hill (J. Arch. Journ., xii., 1855, p. 418).
 6. Bowl of Ancient Puchlos, Tasayan (W. H. Holmes, *Fourth Ann. Rep. Bureau Eth.*, Fig. 308, p. 331).
 7. Handled vase of Ancient Puchlos, Tasayan (*loc. cit.*, Fig. 336, p. 346).
 8. Terra-cotta vase, Third Sepulchre of Mycenæ (Schliemann, *Mycenæ*, 1878, No. 324, p. 209).

III



PLATE IV.—SKEUOMORPHS OF THE WITHY-BAND.

1. "The Tarsus Seal" of Sennacherib, Hittite (*Nature*, April 26, 1888, p. 610). The right-hand design strongly resembles a coarse of the twisted fibre of basketry when removed from the upright osseous-slicks.
2. Detail on incised stone, Kirk Manghold, Isle of Man (*Runic Remains*, Fig. 24).
3. Detail on incised stone, Church of Munt Major, Nîmes, tenth century (Wright, *Hist. of Carvatures*, p. 48).
4. Detail on incised stone, Malew, Isle of Man. "Leather or strap-work" (*Runic Remains*, Fig. 15).

FIDIGER.

5. Gold ornament, Lake Möringen (Keller, *loc. cit.*, Plate LVII., Fig. 9).
6. Gold ornament, Denmark (Worsaae, *Danish Ant.*, p. 62).
7. Bronze pin, Nidan—Steinberg (Keller, *loc. cit.*, Plate XXXIV., Fig. 14).

SKEUOMORPHS OF FASCINING.

8. Floor of lake-dwelling, Niederwyl, 1864 (Keller, *loc. cit.*, Plate XVI., Fig. 8).
9. Bottom of inside of an earthen vessel, Ueberlingen See (Keller, *loc. cit.*, Plate XX., Fig. 6).
10. Part of a crescent of red sandstone, Ebersberg (Keller, *loc. cit.*, Plate CXLIII., Fig. 7).
11. Incised stone from Hadrian's Wall.

SKEUOMORPHS OF WEAVING.

12. Greek fret (Birch, *Ancient Pottery*, Fig. 4, p. 305).
13. Greek fret (Ginzler, *Notes on Ornament*, p. 8).
14. Japanese fret (Ginzler, *loc. cit.*, p. 8).
15. Anglo-Saxon fret, Lambeth. Aldhelm (J. O. Westwood, "Early British Anglo-Saxon and Irish Ornamentation," *Arch. Journ.*, v. p. 290, 1853).



PLATE V.—SKEUOMORPHS OF TIMBERING.

FIGS.

1. Rock tomb, Antiphellus, Lycia (C. Fellows, *A Journal written during an Excursion in Asia Minor*, 1839, p. 225).
2. Rock tomb, Xanthus (Fellows, *loc. cit.*, p. 226).
3. Rock tomb, Antiphellus (Fellows, *loc. cit.*, p. 219).
4. Painting of a house, Pompeii (Gall, Plate 60).
5. Greek egg-and-dart, or Behnau pattern, from entablature, Erechtheion.
6. Scallop pattern on Samian vase (Wormum, *loc. cit.*, p. 58).
7. Greek anthemion, Apollu Epicturini (Wormum, *loc. cit.*, p. 58).



PLATE VI.—ZOOMORPHS.

FIGS.

1. Detail on a vase from Roman villa, Chesterford, Essex (R. C. Neville, "Roman Remains at Icklebus and Chesterford," *Arch. Journ.*, xl., 1849, p. 29).
2. Part of iron sword of Gaulish workmanship, Marin Lake (Keller, *loc. cit.*, Plate CXXVIII., Fig. 6).
3. Detail of mural decoration, Pompeii (*Arch. Journal*, 1877, p. 233).
4. Decoration of an ancient pot of New Mexico (J. Stevenson, "Ethnol. Cat. of Collections obtained from Indians of New Mexico and Arizona," *Second Ann. Rep. Bureau Ethnol.*, 1883, Fig. 363, p. 344).
5. Lombardic gold ornament, Chiost, Tuscany (S. T. Baxter, *Arch. Journ.*, xxxiii., 1876, Plate L., p. 405).
6. Decoration in Greek terra-cotta (Wernum, *loc. cit.*, p. 28).
7. Top of bench-end, Ormskirk Church (*Manchester Guardian*, 10th November 1888).
8. Engraved silver plate, Tamulus, Norrie's Law, Scotland (R. Dundas, "Silver Ornaments in Tamulus at Largo, Fifehire," *Arch. Journ.*, xl., 1849, p. 253).
9. Incised stone, Dinnichen, Scotland (Boyd Dawkins, *Early Man in Britain*, p. 435).
- 10-12. Carving on New Zealand clubs, in the collection of Mr. Charles Heape.
13. Part of carved handle of Harvey Island paddle, in the collection of Mr. Charles Heape.

VI



PLATE VII.—ZOOMORPHS.

FIGS.

1. Detail on incised stone, Isle of Man (*Runic Remains*, Fig. 13).
2. Figure from King Gosm's stone, Jellinge, Jutland (J. Ferguson, *Rune Stone Monuments*, 1872, Fig. 105, p. 296).
3. Detail on carved cross, Gosforth, W. Cumberland (W. S. Calverley, *Arch. Journ.*, xl., 1883, p. 146).
4. Panel in illumination, Gospels of Mac Regol, at Oxford (*Arch. Journal*, x., 1853, p. 291, Fig. 6).
5. Detail on incised stone, Kirk Michael, Isle of Man (*Runic Remains*, Fig. 17).
- 6, 7. Figures on rock sculpture, Crichtie, Scotland (*Arch. Journ.* xiv., 1857, p. 193, Figs. 13, 14).
8. Saxon silver ear-ring, Thetford (*Arch. Journ.* ii., 1846, p. 402).
9. Saxon gold ring, Bormes, Sussex (*Arch. Journ.* xl., 1854, p. 28).
10. Detail on Saxon tomb, Bebylde, Yorks (*Arch. Journ.* iii., 1846, p. 258).

WITHTY BAND.

11. Detail on lid of a stone coffin, Cambridge Castle (T. Kerrich, *Arch.* xvii., 1814, Plate XVI., p. 218).
12. Scandinavian triskele.
13. Reefing knot on Britanno-Roman altar, *Cobbes quarta Galatrum apudata*, Rivington, Northumberland (*Arch. Journ.* xii., 1855, p. 219).

VII

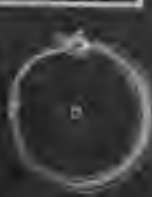


PLATE VIII.—PHYLLOMORPHS.

§108.

A, B. Diagrams of Motifs.

1. Fringe on King Sargon's tunic, in alabaster, Khorsabad (Perrot and Chipiez, *Chaldæa and Assyria*, I., Fig. 22, p. 97).
2. Tabernacle, bronze Gates of Balawat (Perrot and Chipiez, *Chaldæa, etc.*, I., Fig. 68, p. 194).
3. Painting of a tree in a garden from a Theban tomb (Perrot and Chipiez, *Egypt*, II., Fig. 1, p. 3, after Champollion, *Plat. 174*).
4. Ornament painted on plaster, Assyria (Perrot and Chipiez, *Chaldæa, etc.*, I., Fig. 118, p. 276, after Layard).
5. Tassel on a king's tunic, on enamelled brick from Nimroud (Perrot and Chipiez, *Chaldæa, etc.*, II., Plate XIV., p. 294, after Layard).
6. Tasselled canopy over the king, on enamelled brick from Nimroud (*loc. cit.* II., Plate XIV., after Layard).
7. Pavilion carved in stone, Nimroud (*loc. cit.* I., Fig. 67, p. 193).
8. Border pattern of incised stone door sill, Khorsabad (*loc. cit.* I., Fig. 96, p. 240).
9. Enamelled brick, Nimroud (*loc. cit.* II., Plate XIII., p. 294, after Layard).
10. Pattern on ivory panel, Assyrian anthemion (*loc. cit.* II., Fig. 201, p. 321).
11. Anthemion on Sindhi pottery (G. Birdwood, *Indust. Arts of India*, II. 424).
12. Egyptian anthemion, Nekropolis, Thebes (xxiii-xx Dyn.) (Perrot and Chipiez, *Chaldæa, etc.*, I., Fig. 134, p. 306, after Prisse d'Arennes).



INDEX.

- ACCADEMIA MAGICA**, 245
Ador-god Taur, 82, 274
Adze of Hervey Islands, 80
Egyptian spirals, 142
Aegina, tortoise-shell, 239, 232, 233
Aesthetics, definition of, 200
African, axes as money, 225; baskets, 91; fylfot, 287
Alaskan carving, 210, 211; pictograph, 207, 208
Algerian designs, 195
Alligator, 167; drawings of, in America, 168-173 (see Crocodiles)
Alphabet, evolution of, 216
Amaz, W. S., 227
American cross, 174, 259; fylfot, 287; pictographs, 204-223
Ancient worship, 264-267; Polynesia, 81, 265, 270-274
Animal forms in art, 164-183; Sardinian, Gual, Pompeii, Tuscany, New Mexico, 179; Torres Straits, 15; Eskimo, 181; in Melanesia, Polynesia, Africa, Eskimo, French caves, 166
Animals, human souls in, 129, 130; as sun symbols, 136
Anam, batter, 226
Anzelm, Abbé, 281
Anthemion, 143
Anthropomorphism, 183-187, 190; in Greece, 183; New Guinea, 16-19, 20-21, 184; New Zealand, 185; Melanesia, 185; Hawaii, 186; Mangala (Hervey Islands), 185, 270-274; Polynesia, 185
Antipodians, rock tombs, 114, 115
Arabesque patterns, 193
Arabian art, 138
Arinmore Round Tower, 90
Argus pheasant in magic, 241, 243
Aranna, basketry, 104; rain symbol, 119
Arrow, crocodile, 25
Arrows, Torres Straits, 19-25
Art, definition of, 200; ethnological value of, 9, 125-125, 136, 137
Asia Minor, rock tombs, 114-116; triskele in, 239
Assyrian Anthemion, 144; magic, 245; potters, 143; writing, 218-221
Atkinson, J. J., on pottery, 99
Australian art, 324; baskets, 91; designs, 258-263; totemism, 255-261; weapons, 258
Axe, double-headed, as money, 232; New Guinea, 222; as money, 226; stone as money, 225
BALFOUR, H., 311; on frigate-bird, 266; on maces, 222; on medicine, 5
Baker, evolution of, 223-225
Basketry, 90-93; of Arizona, 104
Baskets, making of, 91
Bar patterns, Brazil, 175, 178
Beading, origin of, 86
Beal, 280
Bochmann, sympathetic magic, 235
Bells, wooden, Papuan Gulf, 31-41
Biological method of studying art, 328
Biomorphic, life history of, 186-191
Biomorphic pottery, 188-191
Bird and crocodile design, 56
Bird's-head designs, New Guinea, 49-58
Bird design, Pomorie, 194; potters, Brazil, 178

- Birchwood, Sir G., 214, 202; on
 Indian art, 151, 153
 Black-money, 228, 230
 Blum, Karl, 279, 283
 Bowdler, eagle patterns on, 237;
 239
 Bow, Sam., 295
 Broken shield money, 230, 233
 Braviu, Dr. E., Assyrian art, 156-
 157
 Bulak (royal plaque), 91
 Bull, prayer-neck, 121
 Brazil, art of, 259; Central, art of
 tribes, 174-179; patterns, 97;
 phylogenesis of Central, 130,
 131
 Burton, Dr., on colour symbols,
 124
 British Columbia, totem-poles, 257,
 265
 British magic, 249
 British New Guinea (see New
 Guinea)
 Bronze belt, 85, 86
 Bruce, R., 29
 Bursch, Dr., on lotus, 155
 Bushite sculptures, 151; symbols,
 281
 Bull-crown, Brazil, 176, 178; New
 Guinea, 62
 Butler, Mr., 260, 261

 Cayen carving, New Guinea, 29,
 48, 54-57
 Cayen drums, Solomon, 266, 267
 Cayen trade in, 48
 Cash, 297
 Cash Mary class, 251, 257
 Cattle-money, 228, 229
 Cellar, 337; hybrid, 283; spiral,
 1421; wicker house, 50
 Centipede in magic, 242, 243
 Chaldean art, 309; commerce, 151
 Chalmers, Rev. J., 31, 154
 Chuano, E., 267
 Chumby, P., 252
 Chinese art, 337; knife-money, 226,
 227; lotus, 153; money, 226;
 swastika, 287, 294; writing, 217-
 221
 Christian art, pagan survivals in,
 195-197; hybrid, 283
 Circles, concentric, 93
 Clarke, Dr. J. T., 158
 County flag, 42
 Clubs, wooden, in New Guinea,
 48-56, 62
 Codrington, Dr. R. H., 27, 265-267
 Coffey, G., on Irish art, 122, 328
 Coins, degeneration in, 313
 Collier, J., 1, 2
 Collins, Mr., Australian art, 260
 Colours, symbolic, 123, 124
 Combs, magic, 237-241; Torres
 Straits, 14
 Combs, Dr., 63, 64
 Concentric circles, 93; ovals, 55
 Consciousness in designing patterns,
 315, 316
 Cook, A. B., 265
 Cook, Captain, 81
 Copying of patterns, 311
 Corbula, the Roman, 91
 Crane spirals, 142
 Crocodile in art, New Guinea,
 Torres Straits, 15-25; Bissau,
 56, 181; Papuan Gold, 50; cult
 id, in New Guinea, 167; Malay
 Archipelago, 167; Madagascar,
 168 (see Alligator)
 Cross, from alligator, 192; gilet,
 277, 279; in America, 174, 279;
 St. Anthony, 217
 Cross ansata, 278, 298
 Cushing, F. H., 107, 248; on
 pottery, 98, 99, 102-104; on life-
 size trail, 128; on symbolism,
 119-123
 Cyprus bronze shield, 92; pottery,
 137, 158; lotus designs, 158
 Cyrene plant money, 230, 233
 Cyticus, fish money, 230-232

 DAKOTA Winter Counts, 206
 D'Almeida, 27, 63
 D'Almeida, Goblet, 275-300
 Danish food-vessel, 91
 Darker, hoe as money, 226
 Dandel and Torres Straits, art of,
 13-25
 Banks (beluga-bird), 265-267
 Dammor, wooden clubs, 26
 Designs, geographical distribution
 of, 319

- D'Entrecasteaux, 47, 50, 52, 54, 56, 76
 Distortion, geographical, of designs, 319
 Divine pedigree in art, 274
 Dragon, Scandinavian, 195
 Drum decoration, in New Guinea, 17, 18, 132
 Dumoulier, G., 287
 Dutch New Guinea (see Netherlands)

 EARTH symbol, 280
 East Indian Archipelago, 28
 Ebersberg, clay walls, 89, 95
 Egg-and-dart moulding, origin of, 160-163
 Egyptian art, 133-164, 187, 325, 329, 337; cosmetics, 265; writing, 217-221
 Ehrenreich, Dr. P., 173, 259, 262, 332
 Elena (see Tostoli)
 Elephant symbol, 195
 Ellis, Rev. W., 274
 Eulens, 212
 Engineer Group, 48, 57
 English, A. C., 45
 Environment, effect of, 9
 Eschmo, animal drawings, 281
 Ethnological aspect of art, 9; value of art, 323-325, 336, 337
 Ethnology of British New Guinea, 59-66, 328; of Polynesia, 69
 Evans, Sir John, 313
 Evans, Arthur J., on spirals, 142, 324
 Expectancy, definition of, 6
 Eye-amulets of Egypt, 187

 FASCINUS, 94
 Fellows, Sir C., on rock-temia, 114
 Ferguson, on Indian architecture, 151, 153
 Ferrero, G., 278, 320, 321
 Fewkes, Dr. J. W., rain symbols, 120; on colour symbols, 123
 Fiji club, 88; pottery, 108, 191; scroll designs, 71; tapa, 96
 Finn magic, 209
 Finckh, Dr. O., 47, 63, 98
 Fishing formula, 247
 Fish, as money, 230-232; papyrus in Brazil, 174, 176-179; totem, 222; Christian, 213
 Fish-hook money, 227; ornaments derived from, 76
 Faon and Howitt, 256
 Fleur-de-lys, 156
 Flower, Sir W., 64
 Flowers, in art, 131, 132 (see Lotus); in magic, 237-241
 Fly River, 26-28; a culture-route, 70; mouth of, 26, 191; phylonomorphs, 131
 Forbes, Dr. H. O., 98; on pottery making, 48
 Fraser, J. G., 235, 236, 250-252
 French, G. J., on pottery, 109
 Freshwater Bay, 29
 Fret, 326; from alligator, 111, 112, 123, 141, 172
 Friend, H., on colour symbols, 124
 Frigate-bird, in Melanesia, 265-267; New Guinea, 49, 66, 325, 326; Solomon Islands, 66, 325; fringe patterns, 144-148
 Frog's legs as signs, 244, 248
 Frogs, magic patterns of, 244, 248
 Fyffe, weaving and distribution of, 282-301

 GABLE, 116
 Gairnadam (see Fyffe)
 Gardner, Prof. P., 290
 Gault, erections of, 90
 Gaulish imitation coin, 198
 Geelvink Bay, 131, 325
 Geographical distribution of design, 319
 Geometrical designs, 258, 259
 Gill, Dr. W. W., 255, 270, 274; on New Guinea axes, 79; on Harvey Island adze, 80
 Globe, winged, 298
 Goodyear, Professor W. H., 114, 162, 193, 248, 290, 292-294; on Malay art, 67; on New Zealand art, 68; on resins, 149, 151, 152
 Gourd pottery, 188, 189
 Greece, evolution of anthropomorphs in, 183

- Gates, fylfot in, 282, 283; inter-
laced in ancient, 265
Greek alphabet, 220; art, origin of,
255
Giles, R. T., 288, 292
Ginsie, Dr. E., 258-263
Gipsy pattern, 193
Ginsie, Professor, 214, 237,
252, 254
Gothic, 49-51, 92, 93, 162, 163
Gutta, 115

HADA ornaments, 257
Hall Sound, 43, 46
Hammer of Thor, 275
Hamy, Professor E. T., 47, 325
Harvest festival, 247
Hawaii, gods of, 186
Heraldic designs, 262, 263
Harvey Islands, symbolic adzes, 80-
84; decoration on symbolic adzes
and paddles, 270-274; interlaced,
255; anthropomorphic patterns,
185, 186, 265, 270-274
Heteromorphs, 192
Hickson, Prof. S. J., 69
Hieratic writing, 220
Hill tribes, New Guinea, 46
Hissarlik, 282, 284 (see Troy)
Hitchin, A., 265
Hoes as money, 226
Hobbs, Dr. W. J., pictographs,
206, 207
Hobbs, W. H., 107, 110, 114,
168-173; on pottery, 98, 101,
102; on symbolism, 122; shell
pottery, 91, 190
Homomorph, 215
Honey-suckle pattern, 162
Hornbill designs, 58
Houses, drawings of, 166, 167;
zoomorph form, 180
House-building festival, 246, 247
Hügel, Baron A. von, 71
Hulme, F. E., egg and dart mould-
ing, 163, 164
Human, face on wooden belts, 31;
figures in plain-work, 198, 199
(see Anthropomorphs)
Hunter, J. D., on pottery, 100
Hunting pictograph, 206-208
Hut sun, 115, 283

ICELAND, fylfot in, 285
Idiograms, 216-218
Iliad, 284
Indian art, 151-153, 337; sun sym-
bols, 290; vasatiles, 286, 294
Information, definition of, 4, 203
Initiation into esauhuak, 30, 31, 61
Imitation of patterns, 309
Ionic capitals, evolution of, 157-160
Irish carvings, 337; round towers,
50; fylfot, 283; spirals in art,
142
Irish bark vessel, 102, 103
Italy, North fylfot in, 283

JAPANESE writing, 218, 219; wa-
saka, 287, 294
Java drum, 83

KAV, C. de, 90
Kenne, A. H., 68
Keller, Dr., 89, 91
Kemble, J. M., 336
Ketapung tapa, 96
Kern, M., 286
Kerama belt, 35
Kivai, drums of, 26
Klemm, Dr. G., on Tonga [Fiji]
pottery, 208
Knife-money, 226
Knots, 94; magic, 248-250
Kobong, Australian totem, 262
Kosari, 44, 61
Kotapu tattooing, 61
Kupale pipe, 44, 45

LANDSCAPES, native, 124-126; re-
versed, 126
Lang, Andrew, on savage art, 263
Lasso pictograph, 206
Layard, A. H., on knots, 143, 124
Leaf designs, 28; (totems, 250, 253,
254 (see Phylomorphs and Plant)
Lean-Walk map, 208-210
Leather money, 228
Leisner, Dr., on Buddhist art, 151
Letroche, 278
Letters, origin of, 217
Lianas, magic patterns of, 244
Life-and-trail in a vessel, 128
Life-history in designs, table of,
6, 8

- Lightning symbol, 118-120, 276
 Line symbols, 48, 49, 52-54, 57
 Linet, 42
 Lizard, on arrow, 25; on belt, 37; designs, *Assanilla*, 260; patterns, *Brasil*, 175
 Locust pattern, *Brasil*, 179
 Lotas, 133-164, 325
 Louisiade Group, 47, 51; stone axes, 71, 79
 Lytin, *Irakula*, 214; rock tombs, 114-116

 MACUZ, evolution of, 222
 Macfarlane, Rev. S., 63
 Macpherray, 224
 Macgregor, Sir W., 28, 58, 225
 Magic amulets, 248-250; patterns, 237-246; sympathetic, 5, 6, 235-250
 Maiva belt, 39
 Mahaca, magic patterns, 237-248; phylloporphs of, 131; totemism and tattooing in, 252-254
 Malay Archipelago, decorative art, 67-70, 326; plant designs, 131, 132
 Malay culture derived from India, 67, 69
 Malay Peninsula, magic patterns, 235-248
 Malaysia, scroll designs, 67
 Mallory, Col. Garrick, 215; colour symbolism, 124; pictographs, 204-213, 215; sign language, 222
 Man, E. H., on pottery, 200
 Mandrake, 6
 Mangia adzes, 80-84; decoration on adzes and paddles of, 270-274; anthropomorphs, 185, 186, 265, 270-274; totemism, 255
 Manikod, initiation into, 30, 31, 61
 Manx, three-legged, 214
 Maori scroll designs, 72
 Map, Leau-Woff's, 208-210
 March, Dr. H. Colley, 6, 44, 65, 66, 75, 82, 84, 91, 93, 115, 130, 147, 161, 170, 194, 197, 198, 248, 290, 271-274, 275, 285, 288
 Marks, trade and owner's, 203
 Masks, New Guinea, 62; Papsan Gulf, 30; Torres Straits, 18, 30
 Maspero, Prof., 196; on Ra, 137; on Egyptian art, 148, 248
 Masum, district groups of, 47-58
 Mathews on spandrel colours, 124
 Mats, making of, 90
 Maunder (see Frost)
 Melanesian, use of term, 60; ethnology and handicraft, 60-66; frigate-bird, 265-267; pottery, 158, 159
 Melice lotus designs, 158; spirals, 142; vase decoration, 119
 Men, drawings of, 16-19
 Mesopotam salt patterns, 176-179
 Mesembrin, 290
 Mesopotamian art, 143
 Method of studying art, 306-336
 Mexico, New, bird patterns, 179
 Miava, 44
 Millican, H. C., Oriental money, 227
 Millett, M. de, 287
 Milne Gulf, 47
 Mohammedan art, 151, 152
 Money, evolution of, 223-234
 Montebus, Dr., on spirals, 93
 Montezuma's stone axe, 85
 Moon symbol, 292
 Moreby Group, 47
 Moseley, Professor, Hawaiian gods, 185
 Moss Mats, 29
 Moss tribes, 46, 61; ethnography, 64-66; girl tattooed, 43; trading voyages, 330
 Muller, Max, 286, 292, 331; on colour symbols, 124
 Murray Island (Mer), 18; native drawing of, 125; ornaments derived from salt-lick, 76
 Murray, Prof. A. S., 292
 Mycena art, 142; totemism, 265; vessel, 92

 NAUKKAVIS lotus, 161
 Neandria capital, 158
 Net, fishing, designs, 176, 177
 Netherlands New Guinea, 28, 315
 New Caledonia pottery, 97, 98
 New Guinea, 11; animal representations, 164, 165; anthropomorphs, 184; art, 324-328; barter in, 46-48, 223-225; bird's-head designs,

- 49-58; bird and crocodile design, 50; bull-rearer, 62; Central districts of, 42-46; ethnology of British, 59-66; ethnology of, 328; hill titles, 46; metamorphosis of stone age, 78; phyllo-morphs, 131; "Polynesians" in, 63; pottery, 46-48, 63, 68; scroll patterns, 67-73, 314; tapa belts, 96; tattooing, 43-45
 New Hebrides, 66
 New Ireland carvings, 265
 Newton, J., 214
 New Zealand anthropomorphs, 185; ethnology of, 71; scroll designs, 67, 68, 71, 72; tongue thrusting, 186, 187
 North American totems, 257
 OCEANIA pottery, 97
 Ollis, fish money, 230, 231, 235
 Orang-butan, 242, 334
 Ornaments as money, 224, 225, 229
 Ovis, lotus offering to, 136
 PADDLE with fish designs, 176, 177
 Pagan and Christian overlap in art, 195-197
 Painting on body, 253, 254
 Palau, 85
 Pamine axe-money, 225; emoes, 48
 Papuan, use of term, 60; ethnology and handicraft, 60-66
 Papuan Gulf, 39-41; classification of wooden bells, 32
 Patterns, copying of, 311; invention of, 309; in New Guinea, 314; magic, 237-245
 Perrot and Chaper, 75; on lotus, 143; Phœnician art, 153, 154
 Persian fylfot, 286, 298
 Parris, Flinders, Prof., 80, 221; on spiral symbols, 141; on moieties, 148, 149; on the study of art, 336
 Petroglyphs, 225
 Phœnician art, 153, 154; commerce, 154; writing, 220
 Phonograms, 216-218
 Phylomorphs, 130-164 (see Plant)
 Phylomorphs, 118-125
 Pictographs, 204-218
 Pictorial signs, 212
 Picture-writing, 178
 Pipe, Torres Straits, 13; Fly River, 191; Papuan Gulf, 40; meaning of, in Central District, 42
 Pitt-Rivers, General, 311
 Plant Designs, Fly River, 28; Central District New Guinea, 45; totems, 253, 254; magic climbing, 244; money, 233, 234 (see Phylomorphs)
 Polynesia, ethnology of, 69
 "Polynesians" in New Guinea, 63
 Pompeian designs, 193
 Post Moresby pottery, 46
 Posts, totem, 257, 265
 Pottery, 97; isomorphic, 188-191
 Cypris, 137; New Guinea, 46-48, 62, 98; Nicolais, 100
 Oceania, 97; Post Moresby, 46
 Pueblo, 91, 100-102; Terramora 91; Taste Island, 47, 48; West Pacific, 97-99; Zulu, 103, 104 105-107; trade, 47, 48
 Powell, Major, his totem lodge, 111
 Prince of Wales' feather, 156, 157
 Prière d'Avonnes, 136, 138-141, 197
 Psychology, 300-305, 333
 Pueblo Pottery, 91, 100, 102-111
 Pyung-fut pattern, 246
 QUATREFAGES and HARRY, 63, 64
 RAIN-CHARM, Malacca, 246
 Rain symbols, 119-122, 279
 Rattan pattern, 248
 Rau, C., on pottery, 109
 Ray, S. H., 60, 71; on New Guinea languages, 64
 Read, C. H., 271; on Polynesian art, 185
 Rebus, 217, 218
 Religion, definition of, 5, 267; evolution of, 268
 Religion in art, 81-84, 118-123, 133, 235, 270-305
 Réville, Albert, 279
 Rhodes, lotus designs, 158, 161
 Ridgway, Prof. W., origin of money, 226-234
 Rigo, district tattooing, 45
 Robinsson, baskets, 91

- Reek tombs in Asia Minor, 114-116
Roman vase, 92
Roma, fylket in, 283
Romilly, H. H., 79
Rosettes, 120, 128-130, 162, 163
Rosed Towers, Ireland, 90
- SANAGORAK, 76
Samian pottery, 160, 179
Santastika, 202
Scandinavian fylket, 285; legends,
901 magic, 249; mythology, 196;
sea-snake, 194; worm-knot, 94
Scarification, 61; of tattoos, 252,
256
Schliemann, 142, 278, 280, 282,
287, 292
Scorpion in magic, 242, 243
Scroll designs, 49-56, 93, 163;
gilloches, 49-51, 163; Cornwall,
179; from Iona, 139-142; New
Guinea, 67-71, 326; New Zea-
land, 67, 68, 71, 72, 326; Fiji,
71; Malaysia, 67; from Alligator,
171, 172; symbolism of, 122, 123
(see Spiral)
- Semang magic patterns, 237-248
Semitic writing, 280
Semper, Prof. G., 75, 158
Serp, Prof., 60, 64
Shell-money, 224, 228
Shell pottery, 189, 191
Shield-money, 233
Shields, Papuan Gulf, 30
Sicily, Triads of, 214
Sickness, magic patterns against,
237-245
Signet-ring, 235
Sulphur plant-money, 233, 234
Silvestre, J., 227
Sinnagulo (sinnagulo), 43
Sinner in Oceania, 85
Sinner, stenomorphs of, 87, 88
Stenomorphs, forms of, 75-117,
164-199
Skin diseases, magic against, 244,
245
Smyth, Brough, 230, 261
Snakearrow, 251 designs, Australia,
260; patterns in Brazil, 174-178;
Scandinavian Sun, 194; tattoos,
251-253
Solomon Islands, 66; Frigate bird,
66, 265, 267, 325; canoe charms,
266, 267
Soul, emblems of, 129, 141
South Cape area, 79; ethnography
of, 65, 66
South-east, East of, 180, 195, 278
Spauld, line, 28, 49, 52-54, 57
Spirals, 28, 49, 93, 94, 141, 163;
early European art, 73; bird,
49-57; Jesus, 139-142; on
pottery, 111 (see Scroll)
- Squier and Davis on pottery, 100;
gourd pottery, 188
Stag, Sem-, 194
Star-symbols, 288, 289, 291, 292
Steier, 108
Steinen, Prof. K. von den, 97, 130,
131, 173-179, 332
Stevens, Prof. G., 196
Stevens, H. V., 324; on magic
patterns, 236; on totemism, 252,
254
Stokes, Dr. W., on colour symbols,
123
Stolpe, Dr. H., 9, 21, 185, 186,
270, 271, 334
Stone-age, Scandinavia of, 85; meta-
morphosis of, 78
Suggestion, definition of, 5
Sun, animal symbols of, 176; boar,
195; stag, 194; snake, 194;
symbols, 289-291; Triskels, 211
Svoronos, M. J., 291
Swiss lake-dwelling bronze vessel,
87
Swiss lake-dwelling huts, 89
Symblism, 264; of colour, 123,
124; religious, 275-305; psych-
ology of, 300-305; definition of,
212; Buddhist, 281; of earth,
280; of lightning, 276; of moon,
292; of sun, 279; of sun, 280-
291; of water, 122; of wind, 122,
123, 279
Synaemorph, 215
Sympathetic magic, 5, 6, 235-250
- TANE, the adze god, 82, 274
Tapa, 95, 96; printing on, 95, 96
Tau, 277-279
Tassel patterns, 144-148

- Tattooing in Malacca, 253, 254;
Maori, 72; Melanesian, 61; in
New Guinea, 43-45; in Rigo, 45;
and totemism, 252-256
- Taylor, Dr. Isaac, 166, 167, 283;
alphabet, 216, 218, 219
- Taylor, 286
- Tenedos as money, 230, 232
- Terramara pottery, 91
- Tesle Island canoe carving, 57;
pottery of, 47, 48
- Tetraskelo (see Fylfot)
- Textiles, 89
- Thames Necropolis, tomb decora-
tions, 136-141
- Thibet *svastika*, 287, 294
- Thomas, E. B., 280
- Thompson, W. D'Arcy, 291; on
animal symbols on Greek coins,
234
- Thought, absence of, in Oceania, 85
- Thor's hammer, 278; in modern
Germany, 279
- Tiki-tiki pattern, 273, 274
- Tongue, 29; belt, 38
- Tonga clubs, 86-88, 192; drum,
83; frigate-bird on club, 88;
pottery, 108
- Tongue-thrusting in New Zealand,
186, 187
- Torres Straits and Daudai, art of,
13-15; barter, 224, 225; totem-
ism, 251, 252
- Tortoise eggs, magic pattern, 246
- Totolse money, 232, 233
- Totem animals, 17, 30, 212
- Totemism, 41, 250; in ancient
Greece, 265; in Malacca, 252-
254; and tattooing, 252-256
- Totem-poles, 257, 265; British
Columbia, 265
- Trade marks on pottery, 48
- Triskelo or Triquetra, 213, 214
- Trobland Group, art of, 58; houses,
61; trade of, 47; crocodile pat-
tern, 131; spatulas of, 54
- Troy (see Hisarlik), 289
- Tsuboi, S., on tongue-thrusting,
187; on eye-amulets, 187
- Tunny-fish as money, 230-232
- Tusayan pottery, 111-114
- Tylor, Prof. E. B., 109, 129, 223
- URABLINGEN See, 95
- Uhle, Dr. M., 28, 167; on plant
motives, 139
- Uluris dress pattern, 174
- VAUX, Baron de, 99
- Velh, R. J., on mandrake, 6
- Volste, 157, 258, 160
- Votive offerings, degeneration of,
222, 223
- WALLACE, A. R., 319
- Walrus symbol, 194
- Water symbol, 122
- Wattle-work, 92; huts, 89
- Wealth, definition of, 41 in art,
222
- Whorlwind symbolism, 122, 123
- Wile, value of, 224, 225, 229
- Wilkinson, Sir J. G., lotus, 134
- Williams, Monier, 282
- Wilson, Dr. D., on British arms, 108
- Wind symbol, 123, 279
- Winged globe, 298
- Wire spirals, 94
- Witchy patterns, 94, 194-199
- Wolf in art, 195
- Women's dress pattern, 97, 174, 178
- Wood, J. G., on tongue-thrusting,
187
- Wooden slabs, carved, Danneel,
26; Papuan Gulf, 31
- Woodlark Group, art of, 58; trade
of, 47; spatulas of, 54
- Worm-ancor, Scandinavian, 94
- Writing, evolution of, 216-221; re-
versed, 125
- YULE ISLAND, 42
- ZINZAC, 14, 54, 276, 309; from
alligator, 171; Australian, 258,
259; origin of, 88, 89; in Ancient
Egypt, 89; Brazil, 174-178; frogs'
legs as, 244, 248
- Zoonopsis, 164-183; in mythology,
182; horse, 180; wolf, 195
- Zulu medicine bowl, 121; pottery,
103, 104, 128

The Contemporary Science Series.

Edited by Havelock Ellis.

(1)

THE EVOLUTION OF SEX. By Profs. PATRICK GILLES
and J. A. THOMSON. With 92 Illustrations. Fourth and Revised
Edition. 6s.

"The authors have brought to the task—as indeed their names guarantee—a wealth of knowledge, a lucid and attractive method of treatment, and a rich vein of picturesque language."—*Nature*.

(2)

ELECTRICITY IN MODERN LIFE. By G. W. DE
TUNNELMANN. With over 200 Illustrations. 3s. 6d.

"A clearly-written and connected sketch of what is known about electricity and magnetism, the more prominent modern applications, and the principles on which they are based."—*Saturday Review*.

(3)

THE ORIGIN OF THE ARYANS. By Dr. ISAAC TAYLOR.
Unlimited. Second Edition. 3s. 6d.

"Charles Taylor is probably the most encyclopædic all-round scholar. . . . His volume on the Origin of the Aryans is a distinctive example of the excellent spirit in which he can turn his exceptionally wide and varied information. . . . Masterly and exhaustive."—*Pall Mall Gazette*.

(4)

PHYSIOGNOMY AND EXPRESSION. By P. MONT-
GALL. Illustrated. Second Edition. 3s. 6d.

"Beings this highly interesting subject over with the latest researches. . . . Professor Montgall is a writer full of life and spirit, and the natural attractiveness of his subject is not destroyed by his scientific handling of it."—*Literary World* (Boston).

(5)

EVOLUTION AND DISEASE. By J. B. SUTTON, F.R.C.S.
With 135 Illustrations. 3s. 6d.

"The book is as interesting as a novel, without sacrifice of accuracy or system, and is calculated to give an appreciation of the fundamental of pathology to the lay reader, while forming a useful collection of illustrations of disease for medical reference."—*Journal of Medical Science*.

(6)

THE VILLAGE COMMUNITY. By G. L. GOMME. Illustrated. 3s. 6d.

"This book will probably remain for some time the best work of reference for facts bearing on those phases of the village community which have not been affected by conquest, encroachment, and the heavy load of Roman law."—*Scottish Leader*.

(7)

THE CRIMINAL. By HAVELOCK ELLIS. Illustrated. Third Edition, Revised and Enlarged. 6s.

"The sociologist, the philosopher, the phthisiologist, the novelish—all, indeed, to whom the study of human nature has any attraction—will find Mr. Ellis full of interest and suggestiveness."—*Academy*.

(8)

SANITY AND INSANITY. By Dr. CHARLES MERCIEB. Illustrated. 3s. 6d.

"Taken as a whole, it is the brightest book on the physical side of mental science published in our time."—*Pall Mall Gazette*.

(9)

HYPNOTISM. By Dr. ALBERT MOLL. Fifth Edition, Revised and Enlarged. 3s. 6d.

"This is a step of some importance in the study of some difficult physiological and psychological problems which have not yet received much attention in the scientific world of England."—*Nature*.

(10)

MANUAL TRAINING. By Dr. C. M. WOODWARD, Director of the Manual Training School, St. Louis. Illustrated. 3s. 6d.

"There is no greater authority on the subject than Professor Woodward."—*Manchester Guardian*.

(11)

THE SCIENCE OF FAIRY TALES. By E. STONEY HARTLAND. 3s. 6d.

"Mr. Hartland's book will win the sympathy of all earnest students, both by the knowledge it displays, and by a thorough love and appreciation of his subject, which is evident throughout."—*Spectator*.

(12)

PRIMITIVE FOLK. By ELIE RECLUS. 3s. 6d.

"An attractive and useful introduction to the study of some aspects of ethnography."—*Notes*.

(13)

THE EVOLUTION OF MARRIAGE. By Professor
LETOURNEAU. Second Edition, 3s. 6d.

"Among the distinguished French students of sociology, Professor Letourneau has long stood in the first rank. His approach to the great study of marriage from the point of view of grandchildhood. To submit, scrupulous, and accurate facts to his chief position. In the volume before us he shows them qualified in an admirable degree."
—*Schools*

(14)

BACTERIA AND THEIR PRODUCTS. By Dr. G. SMIT-
WOODHEAD. Illustrated. Third Edition, 3s. 6d.

"An excellent summary of the present state of knowledge of the subject."—*Lancet*.

(15)

EDUCATION AND HEREDITY. By J. M. GUYAU. 3s. 6d.

"It is at once a treatise on sociology, ethics, and psychology. It is doubtful whether among all the ardent enthusiasts who have laid their say on the moral and the educational question any one has carried forward the new doctrine so boldly to its correct logical consequence."—*Professor SULLY in Mind*.

(16)

THE MAN OF GENIUS. By Prof. LOMBROSO. Illustrated,
3s. 6d.

"By far the most comprehensive and fascinating collection of facts and personalities thus concerning genius which has yet been brought together."—*Journal of Mental Science*.

(17)

THE HISTORY OF THE EUROPEAN FAUNA. By
R. F. SCHMIDT, B.Sc., Ph.D., F.Z.S. 6s.

"The book is trustworthy, the information carefully gathered and judiciously treated."—*Bookman*.

(18)

PROPERTY: ITS ORIGIN AND DEVELOPMENT. By
CH. LETOURNEAU, General Secretary to the Anthropological Society,
Paris, and Professor in the School of Anthropology, Paris. 3s. 6d.

"M. Letourneau has made a great deal, and he seems to us to have selected and integrated his facts with considerable judgment and learning."—*International Review*.

(19)

VOLCANOE, PAST AND PRESENT. By Prof. EDWARD
HULL, LL.D., F.R.S. 3s. 6d.

"A very readable account of the phenomena of volcanoes and earthquakes."
—*Nature*.

(20)

PUBLIC HEALTH. By Dr. J. F. J. SYKES. With numerous Illustrations. 3s. 6d.

"Not by any means a mere compilation or a dry record of details and statistics, but it takes up essential points in ventilation, environment, periphytosis, and sanitation bearing upon the preservation of public health."—*Lancet*.

(21)

MODERN METEOROLOGY. AN ACCOUNT OF THE GROWTH AND PRESENT CONDITION OF SOME BRANCHES OF METEOROLOGICAL SCIENCE. By FRANK WALDO, Ph.D., Member of the German and Austrian Meteorological Societies, etc.; late Junior Professor, Signal Service, U.S.A. With 112 Illustrations. 3s. 6d.

"The present volume is the best on the subject for general use that we have seen."—*Daily Telegraph* (London).

(22)

THE GERM-PLASM: A THEORY OF HEREDITY. By AUGUST WEISMANN, Professor in the University of Freiburg-in-Breisgau. With 24 Illustrations. 6s.

"There has been no work published since Darwin's own books which has so thoroughly modified the matter treated by him, or has done so much to place in order and decrease the enormous complexity of the factors of heredity, or, lastly, has brought to light so many new facts and considerations bearing on the subject."—*British Medical Journal*.

(23)

INDUSTRIES OF ANIMALS. By F. HOUSSEY. With numerous Illustrations. 3s. 6d.

"His accuracy is undoubted, yet his facts are unusual all round. These facts are here made use of as systematic groundwork to form the mighty fabric of evolution."—*Manchester Guardian*.

(24)

MAN AND WOMAN. By HAEVELOCK ELLIS. Illustrated. Fourth Edition, Revised and Enlarged. 6s.

"Mr. Havelock Ellis belongs, in some measure, to the continental school of anthropologists; but while equally methodical in the collection of facts, he is far more cautious in the invention of theories, and he has the further distinction of being not only able to think, but able to write. His book is a very good impartial consideration, from a psychological and anthropological point of view, of a subject which is certainly of primary interest."—*Athenaeum*.

(25)

THE EVOLUTION OF MODERN CAPITALISM. By
JOHN A. HOBSON, M.A. Second Edition. 3s. 6d.

"Every page affords evidence of wide and minute study, a weighing of facts and considerations as it is made, a keen sense of the importance of certain points as to which conclusions of all schools have hitherto been confused and careless, and an impartiality generally so great as to give no indication of his [Mr. Hobson's] personal sympathies."—*Pall Mall Gazette*.

(26)

APPARITIONS AND THOUGHT-TRANSFERENCE. By
FRANK PODMORE, B.A. 3s. 6d.

"A very sober and interesting little book. . . . That thought-transference is a real thing, though not perhaps a very common thing, he certainly shows."—*Spectator*.

(27)

AN INTRODUCTION TO COMPARATIVE PSYCHOLOGY.
By PROFESSOR C. LLOYD MORGAN, F.R.S. With Diagrams. Revised
Edition. 5s.

"A strong and complete exposition of Psychology, as it takes shape in a mind previously informed with biological sciences. . . . Well written, extremely entertaining, and intrinsically valuable."—*Saturday Review*.

(28)

THE ORIGINS OF INVENTION: A STUDY OF INDUSTRY
AMONG PRIMITIVE PEOPLES. By OTIS T. MASON, Curator of
the Department of Ethnology in the United States National Museum.
3s. 6d.

"A valuable history of the development of the inventive faculty."—*Nature*.

(29)

THE GROWTH OF THE BRAIN: A STUDY OF THE
NERVOUS SYSTEM IN RELATION TO EDUCATION. By HERVEY
ELLIOTT DONALDSON, Professor of Neurology in the University of
Chicago. 3s. 6d.

"We can say with confidence that Professor Donaldson has carried his work with much care, judgment, and conscientiousness."—*Lancet*.

(30)

EVOLUTION IN ART: AS ILLUSTRATED BY THE LIFE-
HISTORIES OF DESIGN. By PROFESSOR ALFRED C. HADDON,
F.R.S. With 120 Illustrations. 6s.

"It is impossible to speak too highly of this most absorbing and invaluable book."—*Journal of the Anthropological Institute*.

(31)

THE PSYCHOLOGY OF THE EMOTIONS. By TH. RIBOT, Professor at the College of France, Editor of the *Revue philosophique*. 6s.

"Charmingly written, and full of lucid explanations and brilliant comparisons. A masterly exposition."—*British Medical Journal*.

(32)

HALLUCINATIONS AND ILLUSIONS: A STUDY OF THE FALLACIES OF PERCEPTION. By EDMUND FAKISH. 6s.

"The most comprehensive and most scientific work on false perception that has up till now been written in any language."—*Journal of Mental Science*.

(33)

THE NEW PSYCHOLOGY. By E. W. SCRIPTURE, Ph.D. (Leipzig). With 124 Illustrations. 6s.

"We have at present no work in English which gives in so compact a form as comprehensive a view of the subject."—*Liverpool Post*.

(34)

SLEEP: ITS PHYSIOLOGY, PATHOLOGY, HYGIENE, AND PSYCHOLOGY. By MARIE DE MARCÉLÈNE (St. Petersburg). Illustrated. 3s. 6d.

"The book is a complete and wonderfully interesting exposition, and as such ought to receive a hearty welcome."—*Scotsman*.

(35)

THE NATURAL HISTORY OF DIGESTION. By A. LOCKHART GILLISPIE, M.D., F.R.C.P. Ed., F.R.S. Ed. With a large number of Illustrations and Diagrams. 6s.

"Dr. Gillispié's work is one that has been greatly needed. No comprehensive collation of this kind exists in recent English literature. All the important work that has appeared within the past few years is discussed so far as the limits of the book allow of discussion, and extremely little of value has been omitted. Not least interesting are the accents of the author's own original work."—*American Journal of the Medical Sciences*.

(36)

DEGENERACY: ITS CAUSES, SIGNS, AND RESULTS. By Professor EUGENE S. TALBOT, M.D., Chicago. With Illustrations. 6s.

"The author is bold, original, and suggestive, and his work is a contribution of real and indeed great value, more so on the whole than anything that has yet appeared in this country."—*American Journal of Psychology*.

(37)

**THE RACES OF MAN: A SKETCH OF ETHNOGRAPHY
AND ANTHROPOLOGY.** By J. DENIKER. With 178 Illustrations. 6s.

"Dr. Deniker has achieved a success which is well-nigh phenomenal. . . . The well-chosen and carefully-compiled illustrations greatly enhance the value of the work, which we do not hesitate to pronounce the best small treatise on its subject which has appeared of recent years in our language."—*British Medical Journal*.

(38)

**THE PSYCHOLOGY OF RELIGION. AN EMPIRICAL
STUDY OF THE GROWTH OF RELIGIOUS CONSCIOUSNESS.** By
EDWIN DILLER STARBUCK, PH.D., Assistant Professor of Education,
Leland Stanford Junior University. Second Edition. 6s.

"There is here, in the patient gathering and careful consideration of the suggestive facts of religious life, the foundation of a new body of knowledge which will find its place in psychological science and bear practical fruit in religious education and in theology."—*Psychological Review*.

(39)

THE CHILD: A STUDY IN THE EVOLUTION OF MAN.
By Dr. ALEXANDER FRANK CHAMBERLAIN, M.A., PH.D.,
Lecturer on Anthropology in Clark University, Worcester, Mass.
With Illustrations. 6s.

"The work contains much curious information, and should be studied by those who have to do with children."—*Sheffield Daily Telegraph*.

(40)

THE MEDITERRANEAN RACE. By Professor SERGI.
With over 100 Illustrations. 6s.

"Obviously all this requires a great deal of proving; we can only say that Professor Sergi, both in this and in other books, brings forward large quantities of new evidence which may be refuted, but cannot be ignored."—*Times*.

(41)

THE STUDY OF RELIGION. By MORRIS JASTROW, JUN.,
PH.D., Professor in the University of Pennsylvania. 6s.

"It is no hasty compilation, nor is it an attempt to throw into popular form the contents of better books. It provides precisely the kind of introduction which most people need to the comparative study of religion as a factor in the evolution of human thought and culture."—*Newcastle Guardian*.

(42)

HISTORY OF GEOLOGY AND PALÆONTOLOGY TO THE END OF THE NINETEENTH CENTURY. By KARL VON ZITTEL. Translated by MARIA M. OSLIVIER-GORDON, D.Sc., Ph.D. 6s.

"All geologists are grateful to Prof. Zittel for his thorough and painstaking labour, for the fairness and breadth of view, and for his wonderful grasp of the whole of his subject; and English-speaking geologists are under an especial debt of gratitude to Mrs. Oslivier-Gordon for her timely, accurate, and well-written translation."—*Nature*.

(43)

THE MAKING OF CITIZENS: A STUDY IN COMPARATIVE EDUCATION. By R. E. HUGHES, M.A., D.Sc. 6s.

"Mr. Hughes gives a lucid account of the actual position of education in England, Germany, France, and the United States. The statistics present a clear and attractive picture of the manner in which one of the gravest questions now at issue is being solved both at home and abroad."—*Standard*.

(44)

MORALS: A TREATISE ON THE PSYCHO-SOCIOLOGICAL BASES OF ETHICS. By G. L. DUPRAT. Translated from the French by W. J. GREENSTREET, M.A. 6s.

"Professor Duprat writes logically and lucidly, and his treatise is so interesting as it is instructive."—*Pall Mall Gazette*.

(45)

A STUDY OF RECENT EARTHQUAKES. By CHARLES DAVISON, D.Sc., F.G.S. With Illustrations.

"Dr. Davison has done his work well; his valuable volume is well illustrated and attractively written."—*Westminster Gazette*.



Crown 8vo, about 350 pp. each, Cloth Cover, 2/6 per Vol.;
Half-Finished Morocco, Gilt Tops, 5s.

Count Tolstoy's Works.

The following Volumes are already issued—

A RUSSIAN PROPRIETOR.	WHAT TO DO?
THE COSSACKS.	WAR AND PEACE. (4 vols.)
IVAN ILIYITCH, AND OTHER	THE LONG EXILE, ETC.
STORIES.	SEVASTOPOL.
MY RELIGION.	THE KREUTZER SONATA, AND
LIFE.	FAMILY HAPPINESS.
MY CONFESSION.	THE KINGDOM OF GOD IS
CHILDHOOD, BOYHOOD,	WITHIN YOU.
YOUTH.	WORK WHILE YE HAVE THE
THE PHYSIOLOGY OF WAR.	LIGHT.
ANNA KARÉNINA. 3/6.	THE GOSPEL IN BRIEF.

Uniform with the above—

IMPRESSIONS OF RUSSIA. By Dr. GEORG BRANDER.

First 4to, Cloth, Price 1s.

PATRIOTISM AND CHRISTIANITY.

To which is appended a Reply to Criticisms of the Work.

By Count Tolstoy.

1/- Booklets by Count Tolstoy.

Bound in White Grained Boards, with Gilt Lettering.

WHERE LOVE IS, THERE GOD	THE GODSON.
IS ALSO.	IF YOU NEGLECT THE FIRE,
THE TWO PILGRIMS.	YOU DON'T PUT IT OUT.
WHAT MEN LIVE BY.	WHAT SHALL IT PROFIT A MAN?

2/- Booklets by Count Tolstoy.

NEW EDITIONS, REVISED.

Small 12mo, Cloth, with Embossed Design on Cover, each containing
Two Stories by Count Tolstoy, and Two Drawings by
H. R. Millar. In Box, Price 2s. each.

Volume I. contains—	Volume III. contains—
WHERE LOVE IS, THERE GOD	THE TWO PILGRIMS.
IS ALSO.	IF YOU NEGLECT THE FIRE,
THE GODSON.	YOU DON'T PUT IT OUT.
Volume II. contains—	Volume IV. contains—
WHAT MEN LIVE BY.	MASTER AND MAN.
WHAT SHALL IT PROFIT A	Volume V. contains—
MAN?	TOLSTOY'S PARABLES.

THE WALTER SCOTT PUBLISHING COMPANY, LIMITED,
LONDON AND BELLINGHAM-TYNE.

THE CONTEMPORARY SCIENCE SERIES.

Edited by HAVELOCK ELLIS.

NEW VOLUMES. Crown 8vo, Cloth, Price 6s.

A STUDY OF RECENT EARTHQUAKES.

By CHARLES DAVISON, D.Sc., F.R.S., Author of "The Hereford Earthquake of December 17th, 1836."

The aim of the author, who is a leading authority on this subject, is to provide a series of studies of a few earthquakes that have been investigated recently by scientific methods—such as the Neapolitan earthquake of 1857, the Italian earthquakes of 1861 and 1883, the Charleston earthquake of 1886, the Riviera earthquake of 1887, the Japanese earthquake of 1891, the Hereford earthquake of 1893, the Indian earthquake of 1897, etc.

Crown 8vo, Cloth, Price 6s.

MORALS: Their Psycho-Sociological Bases.

Translated from the French of Duprat's *La Morale*.

By W. J. GREENSTADT, M.A., Headmaster of Marling School.

The field of psychological research has been widened by the triple alliance of psychology, physiology, and sociology—an alliance at once of the most intimate and fundamental nature, and productive of far-reaching results. It need, therefore, occasion no surprise that among the volumes of a scientific series is to be found a treatise dealing with ethical questions. Recent works on ethics have not been numerous, and the writers were more anxious to soar into the realm of lofty thought than to lay the foundations of work that will be positive and lasting. It would seem that the time has come for a system of ethics less ambitious in its aims, more restricted in its scope, and based on a more rigorous method of treatment.

Crown 8vo, Cloth, Price 6s.

THE MAKING OF CITIZENS: A Study in Comparative Education.

By R. E. HUGHES, M.A., B.Sc., Author of "Schools at Home and Abroad."

It is instructive and interesting to have a complete and comprehensive account of both our own and foreign systems of education, based upon an exhaustive study of authoritative and official data. Mr. Hughes has set himself the task of showing in detail and by a series of pictures, so to speak, what the four leading nations of the world—England, France, Germany, and America—are doing in the way of manufacturing citizens. The primary and secondary systems are described in detail, and the social problems of national education are described and diagnosed.

Crown 8vo, Cloth, Price 6s. With 12 Portraits.

History of Geology and Palaeontology to the end of the Nineteenth Century.

By KARL VON ZITTEL, Professor of Geology in the University of Munich.

Translated by MARIE M. OGILVIE-GORDON, D.Sc., Ph.D.

This work is recognised as the most complete and authoritative history of geology. It is brought down to the end of the nineteenth century. With the author's advice and assistance the work has been slightly abridged by the omission of the less generally interesting matter.

THE WALTER SCOTT PUBLISHING COMPANY, LIMITED,
LONDON AND WELLING-OH-THE.

The Makers of British Art.

A NEW SERIES OF MONOGRAPHS OF BRITISH ARTISTS.

Each volume illustrated with Twenty Full-page Reproductions
and a Photogravure Portrait.

Square Crown 8vo, Cloth, Gilt Top, Deckled Edges, 3s. 6d. net.

VOLUMES READY.

LANDSEER, SIR EDWIN. By the EDITOR.

"This little volume may rank as the most complete account of Landseer that the world is likely to possess."—*Times*.

REYNOLDS, SIR JOSHUA. By ELISA D'ESTERRE-KEELING.

"To the series entitled 'The Makers of British Art' Miss Eliza d'Esterre-Keeling contributes an admirable little volume on Sir Joshua Reynolds. Miss Keeling's style is sprightly and epigrammatic, and her judgments are well considered."—*Daily Telegraph*.

TURNER, J. M. W. By ROBERT CHIGNELL, Author of
"The Life and Paintings of Vicat Cole, R.A."

ROMNEY, GEORGE. By SIR HERBERT MAXWELL, Bart.,
F.R.S., M.P.

"Likely to remain the best account of the painter's life."—*Athenaeum*.

WILKIE, SIR DAVID. By Professor BAYNE.

CONSTABLE, JOHN. By the Right Hon. LORD WINDSOR.

RAEBURN, SIR HENRY. By EDWARD PINNINGTON.

GAINSBOROUGH, THOMAS. By A. E. FLETCHER.

HOGARTH, WILLIAM. By PROF. G. BALDWIN BROWN.

IN PREPARATION.

MILLAIS—LEIGHTON—HENRY MOORE—MORLAND.

THE WALTER SCOTT PUBLISHING COMPANY, LIMITED,
LONDON AND FELLING-ON-TYNE.

The Scott Library.

Maroon Cloth, Gilt. Price 1s. net per Volume.

May also be had in the following Bindings:—Half-Morocco, gilt top, antique Red Roan, gilt edges, etc.

VOLUMES ALREADY ISSUED—

- | | |
|--|---|
| 35 ARISTOTLE'S ETHICS | 35 ENGLISH PROSE (Manselville to Thackeray) |
| 71 ATHENIAN ORACLE, THE | 99 EPICTETUS, TEACHING OF |
| 104 AUGUSTINE, ST., CONFESSIONS OF | 16 FERRIS'S GREAT MUSICAL COMPOSERS |
| 68 BACON'S ESSAYS | 91 FROISSART, PASSAGES FROM |
| 62 BAIACZ'S SHORTER STORIES | 181 FROUDER-NEMESSOFF FAITH |
| 49 BRONTË'S JANE EYRE | 101 GOETHE'S MAXIMS, ETC. |
| 3 BROWNE'S RELIGIO MEDICI, ETC. | 87 GOGOL'S INSPECTOR-GENERAL |
| 90 BUDNÉ'S LETTERS | 42 GOLDSMITH'S VICAR OF WAKEFIELD |
| 15 BYRON'S LETTERS | 68 COSSE'S NORTHERN STUDIES |
| 48 CARLETON, TALES FROM | 39 HAZLITT, WILLIAM, ESSAYS OF |
| 63 CARLYLE'S MISCELLANEOUS ESSAYS | 23 HEINE IN ART AND LETTERS |
| 32 CARLYLE'S SARTOR RESARTUS | 27 HEINE, HEINRICH, PROSE WRITINGS OF |
| 47 CHESTERFIELD'S LETTERS | 74 HEINE'S ITALIAN TRAVEL SKETCHES |
| 100 CICERO, ORATIONS OF | 79 HELPS'S ESSAYS AND APHORISMS |
| 92 COLERIDGE, PROSE OF | 34 HERBERT'S, LORD, AUTOBIOGRAPHY |
| 14 CUNNINGHAM'S GREAT ENGLISH PAINTERS | 44 HOLMES AUTOGRAPH OF THE BREAKFAST-TABLE |
| 64 DARWIN'S CORAL REEFS | 45 HOLMES' DIARY AT THE BREAKFAST-TABLE |
| 61 DAVIS, THOMAS, PROSE WRITINGS OF | 46 HOLMES' PROFESSOR AT THE BREAKFAST-TABLE |
| 25 DEFORCE CAPTAIN SINGLETON | 16 HUNT, LEIGH, ESSAYS BY |
| 83 DE MUSSET'S COMEDIES | 25 HUSEN'S PILLARS OF SOCIETY |
| 5 DE QUINCEY'S CONFESSIONS | 37 IRRISH FAIRY AND FOLK TALES |
| 91 DE QUINCEY'S ESSAYS | 69 JERROLD, DOUGLAS, PAPERS |
| 116 DESCARTES' DISCOURSE ON METHOD | 28 JOHNSON'S, DR., ESSAYS |
| 67 DICKENS'S MASTER HUMPHREY'S CLOCK, ETC. | 117 KALIDASA'S SARUNTALÂ |
| 57 EALLY REVIEWS OF GREAT WRITERS | 61 LANUS ESSAYS OF KJIA |
| 56 ELIZABETHAN ENGLAND | 84 LAMUS PLAYS AND DRAMATIC ESSAYS |
| 77 ELLIS'S NEW SPIRIT | |
| 33 EMERSON, SELECT WRITINGS OF | |
| 55 ENGLISH FAIRY AND FOLK TALES | |

THE WALTER SCOTT PUBLISHING COMPANY, LIMITED,
LONDON AND BELLINGHAM-TYNE.

The Scott Library—*continued.*

- | | |
|---|---|
| 6 LANDON'S IMAGINARY CONVERSATIONS | 110 REFLECTIONS ON THE REVOLUTION IN FRANCE |
| 44 LANDON'S PENTAMERON, &c. | 103 RENAN'S LIFE OF JESUS |
| 59 LANDON'S PERICLES AND ASPASIA | 108 RENAN'S ANTICHRIST |
| 88 LEOPARD'S THOUGHTS AND DIALOGUES | 130 RENAN'S MARCUS AURELIUS |
| 46 LESSING'S LAOCOON, AND OTHER WRITINGS | 100 RENAN'S POETRY OF CELTIC RACES, &c. |
| 90 LESSING'S NATHAN THE WISE | 28 REYNOLDS'S SIR JOSHUA, DISCOURSES |
| 105 LEWIS, G. H., PRINCIPLES OF SUCCESS IN LITERATURE | 54 RADI, GULISTAN; OR, FLOWER GARDEN |
| 17 LONGFELLOW'S PROSE | 72 SAINTE-BEUVE, ESSAYS ON |
| 12 LOWELL'S ESSAYS ON ENGLISH POETS | 75 SCHILLER'S MAID OF ORLEANS |
| 18 LOWELL'S BLOW PAPER | 82 SCHILLER'S WILLIAM TELL |
| 21 LOWELL'S MY STUDY WINDOW | 108 SCHOPENHAUER |
| 57 MAETERLINCK, PLAYS OF | 114 SCOTTS ESSAYISTS |
| 1 MALORY'S KING ARTHUR | 21 SENECA'S MORALS, SELECTIONS FROM |
| 78 MALORY'S MARVELLOUS ADVENTURES | 8 SHELLEY'S ESSAYS AND LETTERS |
| 19 MARCUS AURELIUS, MEDITATIONS OF | 46 SHERIDAN'S PLAYS |
| 26 MARZANI'S ESSAYS—POLITICAL, &c. | 78 SMITH, SYDNEY, PAPERS BY |
| 115 MILL'S LIBERTY | 52 SPENCER'S ANECDOTES AND OBSERVATIONS |
| 69 MILTON, PROSE OF | 20 STEELE AND ADDISON, PAPERS OF |
| 84 MITFORD'S OUR VILLAGE | 10 SWIFT'S PROSE WRITINGS |
| 80 MONTAIGNE, ESSAYS OF | 80 TACITUS, THE ANNALS OF |
| 53 MORE'S UTOPIA AND EDWARD V. | 81 THACKERAY'S HARRY LYNDON |
| 81 MORRIS'S VOLUNTERS AND NIBLINGS | 4 THOREAU'S ESSAYS, AND OTHER WRITINGS |
| 119 NEWMAN'S SELECT ESSAYS | 2 THOREAU'S WALDEN |
| 112 NEWMAN'S UNIVERSITY SKETCHES | 3 THOREAU'S WEEK ON THE CONCORD |
| 113 PASCAL, BLAISE, SELECT THOUGHTS OF | 25 VASARI'S LIVES OF ITALIAN PAINTERS |
| 73 PLATO, SELECTIONS FROM | 98 WALTON'S COMPLETE ANGLER |
| 90 PLATO'S REPUBLIC | 106 WALTON'S LIVES |
| 7 PLUTARCH'S LIVES | 24 WHITE'S NATURAL HISTORY OF SELBORNE |
| 111 PLINY'S LETTERS—SERIES I. | 23 WHITMAN'S DEMOCRATIC VISTAS |
| 112 PLINY'S LETTERS—SERIES II. | 32 WHITMAN'S SPECIMEN DAYS |
| 61 POPE'S TALES AND ESSAYS | 70 WOLSTONCRAFT'S RIGHTS OF WOMAN |
| 107 POLITICAL ECONOMY SELECTIONS | 85 WORDSWORTH'S PROSE |
| 43 POLITICAL ORATIONS | |

THE WALTER SCOTT PUBLISHING COMPANY, LIMITED,
LONDON AND PELLING-ON-TYNE.

The Canterbury Poets.

EDITED BY WILLIAM SHARP. Cloth, Cal and Uneast Edges, 12s; Red Room,
Gilt Edges, 25s. 6d.; Pad. Morocco, Gilt Edges, 5s.

A Superior Edition Bound in Art Linen, with Photographic Frontispiece, 2s.

1 CHRISTIAN YEAR	25 HOGG
2 COLERIDGE	26 GOLDSMITH
3 LONGFELLOW	27 LOVE LETTERS, etc.
4 CAMPBELL	28 SPENSER
5 SHELLEY	29 CHILDREN OF THE POETS
6 WORDSWORTH	30 JONSON
7 BLAKE	31 BYRON. Miscellaneous
8 WHITTIER	32 BYRON. Don Juan
9 POE	33 THE SONNETS OF EUROPE
10 CHATTERTON	34 RAMSAY
11 BURNS. Songs	35 DOBELL
12 BURNS. Poems	36 POPE
13 MARLOWE	37 HEINE
14 KEATS	38 BEAUMONT & FLETCHER
15 HERBERT	39 BOWLES, LAMB, etc.
16 HUGO	40 SEA MUSIC
17 COWPER	41 EARLY ENGLISH POETRY
18 SHAKESPEARE'S POEMS, etc.	42 HERRICK
19 EMERSON	43 BALLADES AND RONDEAUS
20 SONNETS OF THIS CENTURY	44 IRISH MINSTRELSY
21 WHITMAN	45 MILTON'S PARADISE LOST
22 SCOTT. Lady of the Lake, etc.	46 JACOBITE BALLADS
23 SCOTT. Marmion, etc.	47 DAYS OF THE YEAR
24 PRÆD	48 AUSTRALIAN BALLADS
	49 MOORE

THE WALTER SCOTT PUBLISHING COMPANY, LIMITED,
LONDON AND WELLINGBURY.

The Canterbury Poets—*continued*

30 BORDER BALLADS	79 GERMAN BALLADS
31 SONG-TIDE	80 SONGS OF BERANGER
32 ODES OF HORACE	81 RODEN NOEL'S POEMS
33 OSSIAN	82 SONGS OF FREEDOM
34 FAIRY MUSIC	83 CANADIAN POEMS
35 SOUTHEY	84 CONTEMPORARY SCOT- TISH VERSE
36 CHAUCER	85 POEMS OF NATURE
37 GOLDEN TREASURY	86 CRADLE SONGS
38 POEMS OF WILD LIFE	87 BALLADS OF SPORT
39 PARADISE REGAINED	88 MATTHEW ARNOLD
40 CRABBE	89 CLOUGH'S BOTHIE
41 DORA GREENWELL	90 BROWNING'S POEMS <i>Pippa Passes, etc. Vol. 1.</i>
42 FAUST	91 BROWNING'S POEMS <i>A Blot in the 'Scarcheon, etc. Vol. 2.</i>
43 AMERICAN SONNETS	92 BROWNING'S POEMS <i>Dramatic Lyrics. Vol. 3.</i>
44 LANDOR'S POEMS	93 MACRAY'S LOVER'S MIS- SAL
45 GREEK ANTHOLOGY	94 HENRY KIRKE WHITE
46 HUNT AND HOOD	95 LYRA NICOTIANA
47 HUMOROUS POEMS	96 AURORA LEIGH
48 LYTTON'S PLAYS	97 TENNYSON'S POEMS <i>In Memoriam, etc.</i>
49 GREAT ODES	98 TENNYSON'S POEMS <i>The Princess, etc.</i>
50 MEREDITH'S POEMS	99 WAR SONGS
51 IMITATION OF CHRIST	100 JAMES THOMSON
52 NAVAL SONGS	101 ALEXANDER SMITH
53 PAINTER POETS	102 EUGÈNE LEE-HAMILTON
54 WOMEN POETS	103 PAUL VERLAINE
55 LOVE LYRICS	
56 AMERICAN HUMOROUS VERSE	
57 SCOTTISH MINOR POETS	
58 CAVALIER LYRISTS	

THE WALTER SCOTT PUBLISHING COMPANY, LIMITED,
LONDON AND WELLING-BOROUGH.

Ibsen's Prose Dramas

EDITED BY WILLIAM ARCHER.

Complete in Five Vols. Crown 8vo, Cloth, Price 3s. 6d. each.

*Set of Five Vols., in Case, 17s. 6d.; in Half Morocco,
in Case, 32s. 6d.*

'We seem at last to be shown men and women as they are; and at first it is more than we can endure. . . . All life sets themselves afraid and act as if they were hypnotized, and under their creator's imperious demand to reveal themselves. There never was such a mirror held up to nature before; it is too terrible. . . . Yet we must return to them, with his remorseless surgery, his remorseless electric light, until we, too, have grown strong and dauntless to face the world—if necessary, the fayed and bleeding—really.'—SOMERSET (London).

VOL. I. 'A DOLL'S HOUSE,' 'THE LEAGUE OF YOUTH,' and 'THE PILLARS OF SOCIETY.' With Portrait of the Author, and Biographical Introduction by WILLIAM ARCHER.

VOL. II. 'GHOSTS,' 'AN ENEMY OF THE PEOPLE,' and 'THE WILD DUCK.' With an Introductory Note.

VOL. III. 'LADY INGER OF ÖSTRÄT,' 'THE VIKINGS AT HELGELAND,' 'THE PRETENDERS.' With an Introductory Note and Portrait of Ibsen.

VOL. IV. 'EMPEROR AND GALILEAN.' With an Introductory Note by WILLIAM ARCHER.

VOL. V. 'ROSMSERSHOLM,' 'THE LADY FROM THE SEA,' 'HEDDA GABLER.' Translated by WILLIAM ARCHER. With an Introductory Note.

The sequence of the plays in each volume is chronological; the complete set of volumes comprising the dramas presents them in chronological order.

THE WALTER SCOTT PUBLISHING COMPANY, LIMITED,
LONDON AND BELTING-ON-TYNE.

Great Writers

A NEW SERIES OF CRITICAL BIOGRAPHIES.

EDITED BY ERIC ROBERTSON AND FRANK T. MARZIALS.
A Complete Bibliography to each Volume, by J. F. ANDERSON, British
Museum, London.

Cloth, Uncut Edges, Gilt Top. Price 12. 6d.

VOLUMES ALREADY ISSUED.

- LIFE OF LONGFELLOW. By Professor ERIC S. ROBERTSON.
LIFE OF COLERIDGE. By HALL CAHME.
LIFE OF DICKENS. By FRANK T. MARZIALS.
LIFE OF DANTE GABRIEL ROSSETTI. By J. KNIGHT.
LIFE OF SAMUEL JOHNSON. By Colonel P. GRANT.
LIFE OF DARWIN. By G. T. BRYANT.
LIFE OF CHARLOTTE BRONTË. By A. DSWILL.
LIFE OF THOMAS CARLYLE. By R. GARNETT, LL.D.
LIFE OF ADAM SMITH. By R. D. HALDANE, M.P.
LIFE OF KEATS. By W. M. ROBERTS.
LIFE OF SHELLEY. By WILLIAM SHARP.
LIFE OF SHOLLETT. By DAVID HANCOCK.
LIFE OF GOLDSMITH. By AUSTIN DOBSON.
LIFE OF SCOTT. By Professor VONON.
LIFE OF BURNS. By Professor BLACKIE.
LIFE OF VICTOR HUGO. By FRANK T. MARZIALS.
LIFE OF EMERSON. By RICHARD GARNETT, LL.D.
LIFE OF GOETHE. By JAMES SUE.
LIFE OF CONGREVE. By EDMUND COSSE.
LIFE OF HUNTER. By CHAS. VERALL.
LIFE OF CHABRE. By T. E. KESSEL.
LIFE OF HEINE. By WILLIAM SHARP.
LIFE OF MILL. By W. L. COURTNEY.
LIFE OF SCHILLER. By HERBERT W. NEVILL.
LIFE OF CAPTAIN MARRYAT. By DAVID HANCOCK.
LIFE OF LOSSING. By T. W. ROLLESTON.
LIFE OF MILTON. By R. GARNETT, LL.D.
LIFE OF BALZAC. By FREDERICK WOODCOCK.
LIFE OF GEORGE ELIOT. By OSCAR BROWNING.
LIFE OF JANE AUSTEN. By COLLETT SMITH.
LIFE OF BROWNING. By WILLIAM SHARP.
LIFE OF BYRON. By HEN. RUDEN NIEL.
LIFE OF HAWTHORNE. By MORRIS D. CONWAY.
LIFE OF SCHOPENHAUER. By THOMAS WALLACE.
LIFE OF SHERRIDAN. By LLOYD SANDERS.
LIFE OF THACKERAY. By HERMAN MERTVALE and FRANK T.
MARZIALS.
LIFE OF CERVANTES. By H. E. WATTS.
LIFE OF VOLTAIRE. By FRANCIS ESPINASSE.
LIFE OF LEIGH HUNT. By COSMO MCKENZIE.
LIFE OF WHITTIER. By W. J. LINTON.
LIFE OF RENAN. By FRANCIS ESPINASSE.
LIFE OF THOREAU. By H. S. SALT.

LIBRARY EDITION OF 'GREAT WRITERS,' Demy 8vo, 2s. 6d.

THE WALTER SCOTT PUBLISHING COMPANY, LIMITED,
LONDON AND PRINCETON-ON-TYNE.

COMPACT AND PRACTICAL.

In Limp Cloth ; for the Pocket. Price One Shilling.

THE EUROPEAN CONVERSATION BOOKS.

FRENCH

ITALIAN

SPANISH

GERMAN

NORWEGIAN

CONTENTS.

Hints to Travellers—Everyday Expressions—Arriving at and Leaving a Railway Station—Custom House Enquiries—In a Train—At a Buffet and Restaurant—At an Hotel—Paying an Hotel Bill—Enquiries in a Town—On Board Ship—Embarking and Disembarking—Excursion by Carriage—Enquiries as to Diligences—Enquiries as to Boats—Engaging Apartments—Washing List and Days of Week—Restaurant Vocabulary—Telegrams and Letters, etc., etc.

The contents of these little handbooks are so arranged as to permit direct and immediate reference. All dialogues or enquiries not considered absolutely essential have been purposely excluded, nothing being introduced which might confuse the traveller rather than assist him. A few hints are given in the introduction which will be found valuable to these unaccustomed to foreign travel.

THE WALTER SCOTT PUBLISHING COMPANY, LIMITED,
LONDON AND WELLING-BOROUGH.

NEW ENGLAND LIBRARY.

GRAVURE EDITION.

PRINTED ON ANTIQUE PAPER. 2s. 6d. PER VOL.

Each Volume with a Frontispiece in Photogravure.

By **NATHANIEL HAWTHORNE.**

THE SCARLET LETTER.
THE HOUSE OF THE SEVEN GABLES.
THE BLITHEDALE ROMANCE.
TANGLEWOOD TALES.
TWICE-TOLD TALES.
A WONDER-BOOK FOR GIRLS AND BOYS.
OUR OLD HOME.
MOSES FROM AN OLD MANSE.
THE SNOW IMAGE.
TRUE STORIES FROM HISTORY AND BIOGRAPHY.
THE NEW ADAM AND EVE.
LEGENDS OF THE PROVINCE HOUSE.

By **OLIVER WENDELL HOLMES.**

THE AUTOCRAT OF THE BREAKFAST-TABLE.
THE PROFESSOR AT THE BREAKFAST-TABLE.
THE POET AT THE BREAKFAST-TABLE.
ELSIE VENNER.

By **HENRY THOREAU.**

ESSAYS AND OTHER WRITINGS.
WALDEN; OR, LIFE IN THE WOODS.
A WEEK ON THE CONCORD.

THE WALTER SCOTT PUBLISHING COMPANY, LIMITED,
LONDON AND BEIJING-CH-THREE.

EVERY-DAY HELP SERIES

OF USEFUL HANDBOOKS. Price 6d. each,

OR IN ROAN BINDING, PRICE 1s.

Contributors—J. LANGDON DOWN, M.D., F.R.C.P.; HENRY POWER, M.B., F.R.C.S.; J. MORTIMER-GRANVILLE, M.D.; J. CRICHTON BROWNE, M.D., LL.D.; ROBERT FARQUHARSON, M.D., Edin.; W. S. GREENFIELD, M.D., F.R.C.P.; and others.

1. **How to Do Business.** A Guide to Success in Life.
2. **How to Behave.** Manual of Etiquette and Personal Habits.
3. **How to Write.** A Manual of Composition and Letter Writing.
4. **How to Debate.** With Hints on Public Speaking.
5. **Don'ts:** Directions for avoiding Common Errors of Speech.
6. **The Parental Don'ts:** Warnings to Parents.
7. **Why Smoke and Drink.** By James Parson.
8. **Elocution.** By T. R. W. Pearson, M.A., of St. Catherine's College, Cambridge, and F. W. Waltham, Lecturers on Elocution.
9. **The Secret of a Clear Head.**
10. **Common Mind Troubles.**
11. **The Secret of a Good Memory.**
12. **Youth: its Care and Culture.**
13. **The Heart and its Function.**
14. **Personal Appearances in Health and Disease.**
15. **The House and its Surroundings.**
16. **Alcohol: its Use and Abuse.**
17. **Exercise and Training.**
18. **Baths and Bathing.**
19. **Health in Schools.**
20. **The Skin and its Troubles.**
21. **How to make the Best of Life.**
22. **Nerves and Nerve-Troubles.**
23. **The Sight, and How to Preserve It.**
24. **Premature Death: its Promotion and Prevention.**
25. **Change, as a Mental Restorative.**
26. **The Gentle Art of Nursing the Sick.**
27. **The Care of Infants and Young Children.**
28. **Invalid Feeding, with Hints on Diet.**
29. **Every-day Ailments, and How to Treat Them.**
30. **Thrifty Housekeeping.**
31. **Home Cooking.**
32. **Flowers and Flower Culture.**
33. **Sleep and Sleeplessness.**
34. **The Story of Life.**
35. **Household Nursing.**

THE WALTER SCOTT PUBLISHING COMPANY, LIMITED,
LONDON AND FALING-ON-TYNE.

The Music Story Series.

A SERIES OF LITERARY-MUSICAL MONOGRAPHS.

Edited by FREDERICK J. CROWEST,

Author of "The Great Tone Poets."

*Illustrated with Photogravure and Collotype Portraits, Half-tone and Line
Pictures, Facsimiles, etc.*

Square Crown 8vo, Cloth, 3s. 6d. net.

VOLUMES NOW READY.

THE STORY OF ORATORIO. By ANNIE W. PATTERSON, B.A., Mus. Doc.

THE STORY OF NOTATION. By C. F. ABDY WILLIAMS, M.A., Mus. Bac.

THE STORY OF THE ORGAN. By C. F. ABDY WILLIAMS, M.A., Author of "Bach" and "Handel" ("Master Musicians' Series").

THE STORY OF CHAMBER MUSIC. By N. KILBURN, Mus. Bac. (Canis), Conductor of the Middlesbrough, Sunderland, and Bishop Auckland Musical Societies.

THE STORY OF THE VIOLIN. By PAUL STOEVIING, Professor of the Violin, Guildhall School of Music, London.

THE STORY OF THE HARP. By WILLIAM H. GRATTAN FLOOD, Author of "History of Irish Music."

NEXT VOLUME.

THE STORY OF ORGAN MUSIC. By C. F. ABDY WILLIAMS, M.A., Mus. Bac.

IN PREPARATION.

THE STORY OF THE PIANOFORTE. By ALGERNON S. ROSE, Author of "Talks with Bandmen."

THE STORY OF HARMONY. By EUSTACE J. BREAKSPEARE, Author of "Mozart," "Musical Aesthetics," etc.

THE STORY OF THE ORCHESTRA. By STEWART MACPHERSON, Fellow and Professor, Royal Academy of Music.

THE STORY OF BIBLE MUSIC. By ELEANORE D'ESTERRE-KEELING, Author of "The Musicians' Birthday Book."

THE STORY OF CHURCH MUSIC. By THE EDITOR.
ETC., ETC., ETC.

THE WALTER SCOTT PUBLISHING COMPANY, LIMITED,
LONDON AND FELLING-ON-TYNE.

MUSICIANS' WIT, HUMOUR, AND ANECDOTE :

BEING *ON DITS* OF COMPOSERS, SINGERS, AND INSTRUMENTALISTS OF ALL TIMES.

By FREDERICK J. CROWEST,

Author of "The Great Tune Poets," "The Story of British Music,"

Editor of "The Master Musicians" Series, &c., &c.

Profusely Illustrated with Quaint Drawings by
J. P. DONNE.

In One Volume—Crown 8vo, Cloth, Richly Gift, Price 3/6.

Among the hundreds of stories abounding in wit and pointed repartee which the volume contains, will be found anecdotes of famous musicians of all countries and periods.

TOLSTOY: His Life and Works.

By JOHN C. KENWORTHY,

AN INTIMATE FRIEND OF THE GREAT RUSSIAN WRITER.

*One Volume, Crown 8vo, 256 pages, Richly Bound, containing
Portraits, Facsimile Letters, Views, etc.*

PRICE SIX SHILLINGS.

THE WALTER SCOTT PUBLISHING COMPANY, LIMITED,
LONDON AND WELLINGTON.

